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ICONES ORCHIDACEARUM

Fascicle 3

THE GENUS EPIDENDRUM

Part 2

"A Second Century of New Species in Epidendrum"

Eric Hágsater

CONTRIBUTORS TO FASCICLE 3

Authors:
Eric Hágsater
Calaway H. Dodson
Javier García-Cruz
Luis Sánchez Saldaña
Pedro Ortíz Valdivieso
Gerardo A. Salazar
Georges Cremers
James D. Ackerman
Vitorino Paiva Castro Neto

Illustrators:
Rolando Jiménez Machorro
Eric Hágsater
Gerardo A. Salazar

Editors: Eric Hágsater, Luis Sánchez Saldaña and Javier García-Cruz



Herbario AMO

Apartado Postal 53-123, 11320 México, D.F., MÉXICO

ICONES ORCHIDACEARUM

Fascicle 3, plates 301 to 400

THE GENUS *EPIDENDRUM*
Part 2

"A Second Century of New Species in *Epidendrum*"

Reference Map

TROPICAL AMERICA
(numbers refer to the portions of the map used in individual plates)



ICONES ORCHIDACEARUM
Fascicle 3, plates 301 to 400

The Genus *Epidendrum*, Part 2
"A Second Century of New Species in *Epidendrum*"

Foreword

It has now been over six years since I published the first Century of New Species in *Epidendrum*. During that time there has been more work with herbarium material, and the illustration of living plants in cultivation in Mexico, than collecting in the field. Much of the material from various herbaria around the world has been on loan at AMO for many years now. The complexity of the genus, with some 2000 species, has become an impediment to returning the loans as rapidly as would have been my wish. Having such a good representation of the material at hand, and much more available as color slides, all of it on our database AMO-DATA, has enabled me to go back to the material once I get a clue of the distinguishing features of a particular group and sort out the species. In a large number of cases, what seemed to be "variable" species have turned out to be groups of well-defined species. In most cases, even the larger herbaria do not have many of the species of a group, and thus it is only by comparing the material of many herbaria, throughout the range of a group, that patterns of variation become evident. Many type specimens of previously published species have turned up in the loans. Many specimens have been illustrated and designated as type material of new species. I hope that curators will pardon the delay. Most of the larger loans are still not being returned. Information about the material on loan, from the AMO-DATA base is always available to other students.

The little field work that was accomplished during these years, was only possible thanks to the help of local scientists and especially to amateur collectors and growers, who have collected much of the material used in this volume, and made live specimens available for growing in Mexico. It has only been possible to travel to countries where collecting and CITES permits are available to visiting botanists, or CITES permits issued to local nurseries for cultivated material. In general, I have tried in recent years to deposit the holotype in the country of origin, with duplicates or other material going to other Latin-American herbaria where they may be useful to local and foreign students. Much of the material was distributed at the end of 1998 under our AMO CITES scientific inter-institutional exchange permit.

Field trips to Ecuador, always in the company of Cal Dodson and other botanists including Bob Dressler, Norris Williams and Mark Whitten, were possible thanks to the collecting and export permits from Ecuador, as well as the corresponding Mexican import permit. The many years spent by Cal travelling across Ecuador, and his knowledge of the country's biodiversity have been a major asset. The Orchidaceae of the Catalogue of Vascular Plants of Ecuador, soon to be published by the Missouri Botanical Garden, unfortunately does not include the new species from that country published here.

A field trip to Costa Rica by Luis Sánchez Saldaña and Javier García-Cruz was supported in part by The Marie Selby Botanical Gardens, in collaboration with INBio, the Instituto Nacional de Biodiversidad, and the Lankester Gardens of the National University, and the corresponding permits of Costa Rica and Mexico. I wish to thank Eduardo Lépiz of INBio for his help in accompanying them to the field and in the herbarium. Dora Emilia Mora de Retana also helped in the Lankester Gardens and the Biological Reserve of Tapantí.

A very fruitful trip to Colombia led to the identification of much of the material at the National Herbarium (COL) in Santa Fé de Bogotá, with the collaboration of Jorge Sarmiento who has been curating the orchid collection. As always, Father Pedro Ortíz Valdivieso has been very helpful with his knowledge of Colombian orchids, and his collections of specimens, slides and illustrations now deposited at the Pontificia Universidad Javierana (HPUJ). In Medellín a short visit to JAUM led to the identification of material that had been added since my last visit. There also I had the very valuable help of various orchid

collectors, growers and students, including Guillermo Misas, who shared his illustrations, especially those based on his collections around Bahía Solano, in the Chocó. Of special help were the plants given to me by Juan Felipe Posadas and the staff of Colomborquídeas, who had been collecting plants over several years, many of them photographed by Rodrigo Escobar for his monumental work Native Orchids of Colombia, the six volumes having now been published.

During these years my understanding of the genus has grown, especially with the help of various collaborators, either in the field or specializing in one or the other group within *Epidendrum*. At this point, I now have a working key of the many groups of *Epidendrum* that in many cases permits the rapid identification of numerous species. Unfortunately, it is not yet possible to publish a complete key at this point, as there are still several important blank spots which need further study. I have however been able to prepare a key to the species of *Epidendrum* of Costa Rica for the Manual of the Orchids of Costa Rica which will be published soon by the Missouri Botanical Garden. Numerous species included in that key are published here as new to science. The other issue which still needs work is getting a full understanding of the phylogenetic relationships between the groups of species within the genus. I continue to change species from one group to another, but hope to have a better understanding sometime soon. In any case, it is now clear to me that several genera which have been segregated from the genus in the past on the basis of such characteristics as the thickening of the stem, or the viscidium are artificial. Only *Encyclia* (*sensu lato*) and *Oerstedella* continue to stand.

It continues to be evident on the other hand, that using floral details alone to identify the species of *Epidendrum*, as has been customary, is nearly useless, and that vegetative architecture is as important or more so, not only in identifying groups of species, but the species themselves. In each group the features used to separate species are different, and therefore a detailed knowledge of each group is essential.

Eric A. Christenson has been very helpful in providing copies of many specimens he has seen in the smaller, less frequented herbaria including HBG, LE and MOL. He and I have also established an exchange of information and identification of material, especially from Peru, which has permitted me to get a better understanding of some of the species in western South America.

I also wish to thank James D. Ackerman (UPRRP) of Puerto Rico, Vitorino Paiva Castro of Brazil, Georges Cremers (formerly at CAY) of French Guyana, Gerardo A. Salazar of Mexico (now curator of orchids at MEXU) and Philip Silverstone-Sopkin (CUVC) of Cali, Colombia for sharing their knowledge and material. To acknowledge the help of the many other individuals who helped me would make a lengthy enumeration indeed; thanks to all.

At AMO, Luis Sanchez Saldaña, curator, has worked extensively on the Difforme group, bringing it to some 70 or so recognized species, a number of them published in this volume. We wish to thank Germán Carnevali, now at CICY in Mérida, Yucatán, for sharing his experience and material of Venezuelan species, as well as his comments on the manuscripts. Javier García-Cruz, has specialized in and resolved the Platystigma group, with most species published herein, as well as the Allenii group, a number of which are also published here, with a few more still to come. His work with AMO-DATA, our collections database has been invaluable. Rolando Jiménez Machorro, our illustrator, has worked the Mexican Oncidiums as his university thesis. His capacity to illustrate live plants and bring back to life pressed specimens is clearly visible throughout our Icones. Ed Greenwood, now in Ontario, Canada, has helped in revising all the manuscripts, and correcting the English texts. His often critical comments in comparing illustrations to texts is much appreciated.

Finally, I wish to thank Jerzy Rzedowski of IEB for his help in translating the Latin diagnoses on brief notice.

Eric Hágsater
Mexico City, January 1999

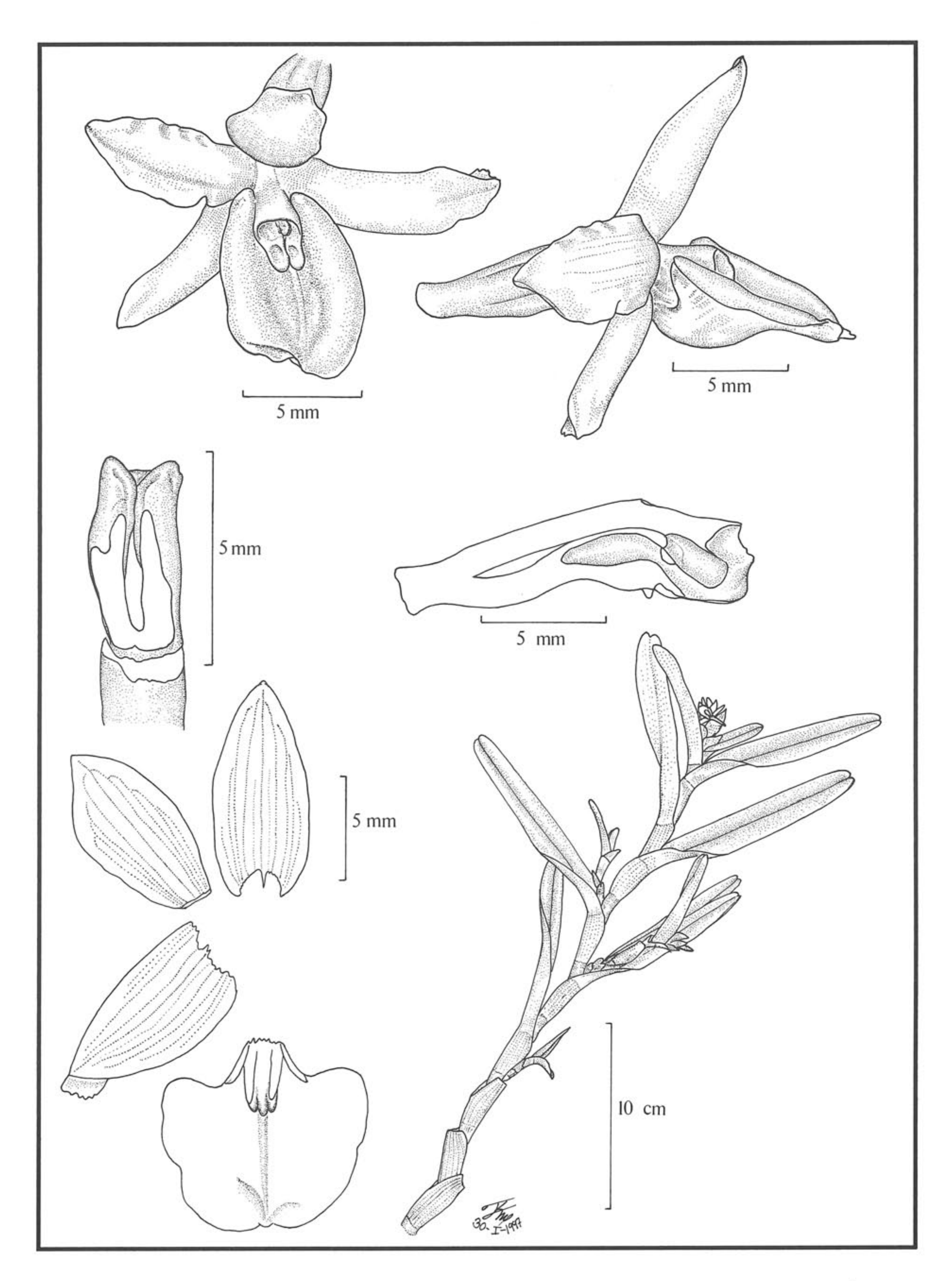
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EPIDENDRUM ACROSTIGMA Hágsater & García-Cruz

Plate 301

EPIDENDRUM ACROSTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: PANAMA: Chiriquí: W end of high N of Barú summit, ca. 3000 m, col. 8 Apr. 1979, ***B. Hammel 6910, W. D'Arcy, E. C. Hills, S. Schwartz & O. &. H. Wolcott*** AMO! (illustration voucher). Isotype: MO!

Epidendro platystigma Rchb. f. simile sed floribus alboviridulis, labello interdum e rubro suffuso subquadrato, sepalis valde carinatis, columna recta, recedit.

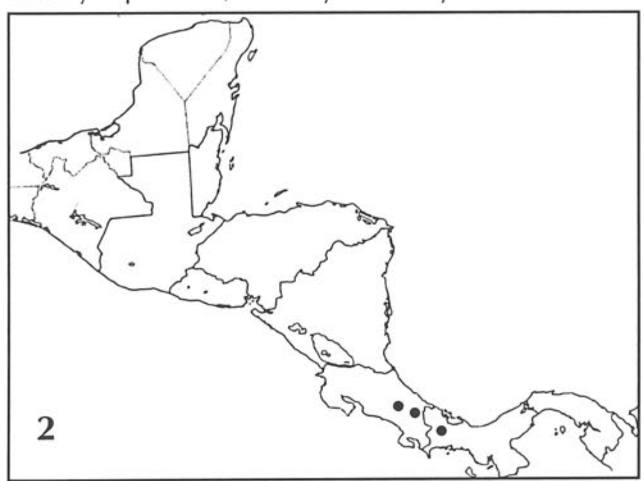
Hierba epífita o terrestre, esencialmente monopodial, de 100 cm de alto o más. **Raíces** basales, filiformes, 1.5-3 mm de grosor. **Tallos** teretes, tipo caña, ramificados, el principal 0.5-1.5 cm de grosor, los secundarios 0.3-0.8 cm de grosor. **Hojas** numerosas, distribuidas a lo largo del tallo principal, pero cuando se ramifica se caen, las hojas de las ramas persistentes; vaina tubular, rugosa, papirácea, blanquecina, 1-4.5 cm de largo; lámina angostamente elíptica, oblicuamente bilobada, redondeada, las del tallo principal 12-16 x 1-2 cm, las del tallo secundario 4-12 x 0.8-2 cm, las del tallo terciario 3-9 x 0.7-1.5 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, racemosa, dística, erecta a arqueada, 4-6 cm de largo; pedúnculo corto, lateralmente comprimido, recto, 1-2 cm de largo; cubierto parcialmente por 1 bráctea, conduplicada, anchamente oblongo-ovada, obtusa, 1-1.6 cm de largo; raquis flexuoso. **Brácteas florales** mucho más largas que el ovario, conduplicadas, no imbricadas, anchamente ovadas, agudas, café-amarillentas al secar, 1-1.9 x 1-1.4 cm. **Flores** 4-6, simultáneas, blanco-verdosas, en ocasiones el labelo difuminado de rojo. **Ovario** no ornamentado, terete, cubierto completamente por las brácteas florales, recto, 10-12 mm de largo. **Sépalos** extendidos, ovado-elípticos, agudos, mucronados, 8-nervado, 9.5-11.5 x 4.5-6 mm; los **laterales** oblicuos, fuertemente carinados, la carina erosa. **Pétalos** extendidos, elípticos, agudos, 7-nervados, 10-11 x 4.5-5.5 mm. **Labelo** unido a la columna, entero, ligeramente trilobado al extenderse, subcuadrado, base cordada, emarginado, con un apículo en el seno, envolviendo completamente a la columna, margen ligeramente revoluto en posición natural, 7.5-8.5 x 9.5-10.5 mm; unicalloso, callo laminar, tridentado; unicarinado, carina a lo largo de la lámina del labelo. **Columna** recta, corta, 4 mm de largo. **Clinandrio** corto, eroso. **Antera** subglobosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves, granulosas; viscidio semilíquido. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** pequeños, de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/5 parte de la longitud del ovario. **Cápsula** subglobosa, 1.7-2 cm de largo, con un cuello apical de 7.5-9 mm de largo.

Epiphytic or terrestrial monopodial **herb. Stems** branched, terete. **Leaves** narrowly elliptic, obliquely bilobed. **Inflorescence** apical from the branches, racemose, distichous, erect to arcuate. **Floral bracts** longer than the ovary, conduplicate, widely ovate, acute. **Flowers** 4-6, simultaneous, greenish white, lip tinged with red. **Ovary** straight. **Sepals** ovate-elliptic, acute, mucronate, 8-veined; the **laterals** oblique, strongly carinate, keel erose. **Petals** elliptic, acute, 7-veined. **Lip** entire, subquadrate, slightly 3-lobed when spread, base cordate; unicallose, callus laminar tridentate; 1-keeled. **Column** straight, short. **Clinandrium** short, erose. **Anther** subglobose, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** slit, subapical. **Lateral stigma lobes** small. **Nectary** slightly penetrating the ovary. **Capsule** subglobose, with an apical neck.

OTHER SPECIMENS: COSTA RICA: Cartago: Tres de Junio, *Todzia 1836* CR, NY! **Puntarenas-Limón:** Cerro Bekom, 11 km SSW of the peak of Cerro Kámuk, *Davidse & Herrera 26196* AMO! CR, MO! **San José:** Cordillera de Talamanca, Pacific slope of Chirripó massif, *Davidse & Pohl 1525* AMO! Near Finca La Cima above Los Lotes, north of El Copey, *Standley 42577* AMES! US! 3 miles E of El Copey, *Stork 1605* AMES! Idem. *Stork 1631* AMES! Carretera Pan Americana, *Todzia & Wilbur 1202* CR! **PANAMA: Chiriquí:** Vicinity of Cerro Punta, *Allen 3479* AMES! Slope of Las Cumbres near Cerro Punta, *Croat 13696* MO! 10 miles above Boquete on road to Volcán Barú, *Croat 34836* MO! Boquete District, Volcán de Chiriquí, *Davidson 971* AMES, F! MO! US.

DISTRIBUTION AND ECOLOGY: Known from the Cordillera de Talamanca in eastern Costa Rica and Panama. Epiphyte or terrestrial, along the Pacific slope, in oak forest and rain forest, from 2200 to 3000 m altitude. Flowering from February to July.

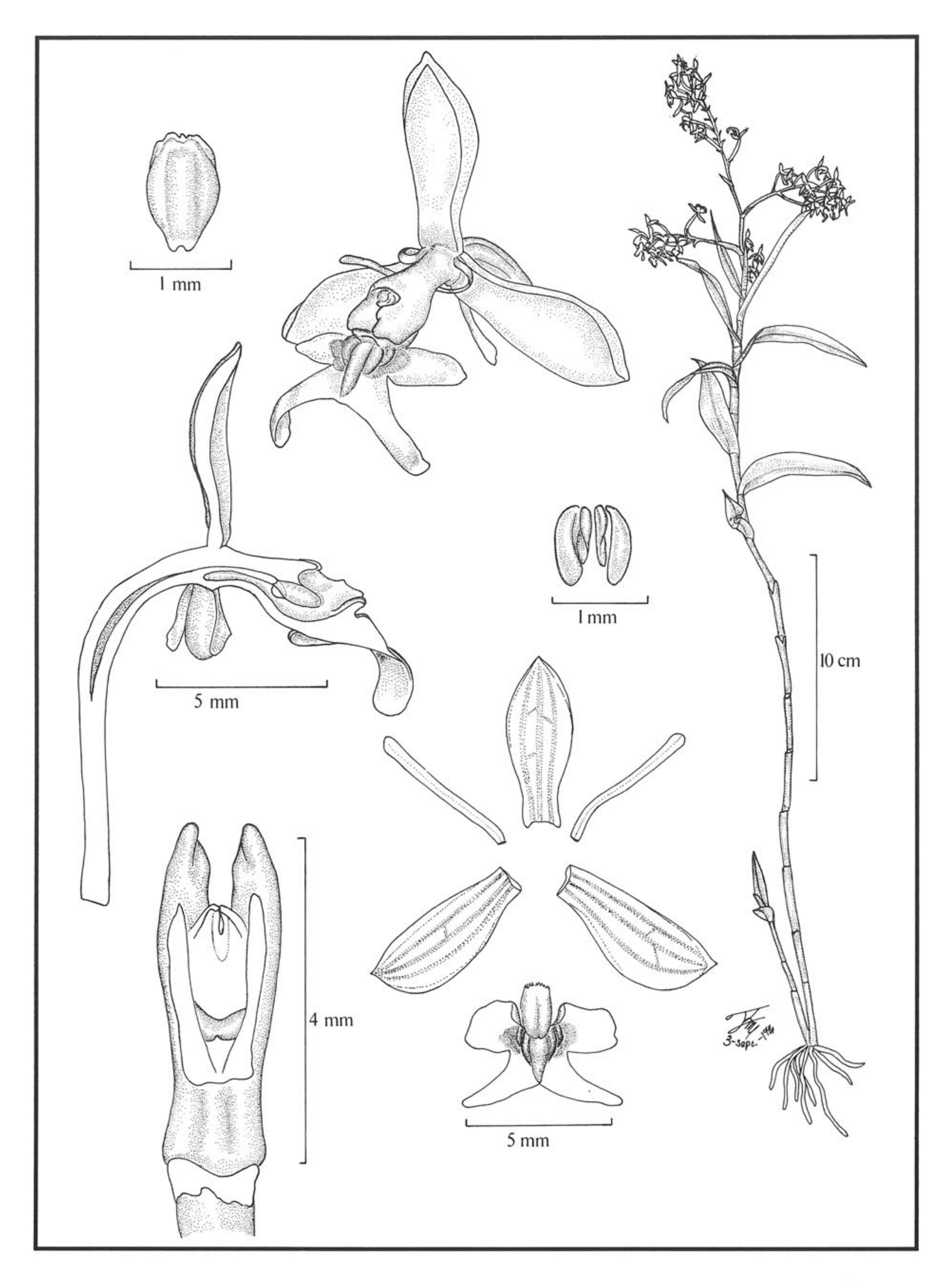
RECOGNITION: *Epidendrum acrostigma* is closely related to *E. platystigma* and can be recognized by the large plants with narrowly elliptic leaves, secondary and tertiary branches with leaves 3-12 x 0.7-2 cm, the floral bracts 1-1.9 cm long, flowers whitish green, sometimes the lip tinged with red, ovary straight, lateral sepals strongly carinate, keel erose, lip subquadrate, base cordate. The latter species has longer leaves, flowers white, the lateral sepals slightly carinate and the lip subtriangular.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The species seems to have the highest altitudinal distribution in the *E. platystigma* group species, and is thus named after that characteristic, from the Greek *"acros"* at the summit, and *"stigma"* in reference to the *E. platystigma* group.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM AGUIRREI Hágsater

Plate 302

EPIDENDRUM AGUIRREI Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Hort. Medellín, pressed 11 Sep. 1996, ***G. A. Aguirre, Padre S. Restrepo sub E. Hágsater 11527*** COL! (illustration voucher). Clonotypes: 30 Sep. 1997 AMO! 29 May 1998 AMES! QCNE! SEL!

Epidendro parvifloro Ruiz & Pavón similis sed floribus leviter majoribus, foliis latioribus, floribus macula purpurea discum cingenti.

Hierba epífita, cespitosa, de 28-42 cm de alto. **Raíces** delgadas, basales, de 1-1.5 mm de grosor. **Tallos** erectos, sencillos, tipo caña, teretes, 18-25 x 0.2-0.3 cm. **Hojas** numerosas, distribuídas a lo largo del tallo, delgadas, flexibles, verdes, las basales caedizas; vaina tubular, finamente estriada, de 1.5-3 cm de largo; lámina lanceolada, acuminada, de 6.5-10 x (0.7)1.1-1.8 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, paniculada, densa, erecta, ligeramente flexuosa, 10-15 cm de largo, ramas de 3-6 cm de largo; pedúnculo terete, corto, de 3-5 cm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, progresivamente más cortas hacia el ápice de las ramas, 2.5-10 x 1.5-2.5 mm. **Flores** 22-45, simultáneas, sépalos y pétalos verdes, labelo blanco con una mancha morada a cada lado del disco, columna bicolor, blanca en el ápice y verde en la base, sin fragancia. **Ovario** terete, no inflado, no ornamentado, 7-12 x 0.7 mm. **Sépalos** extendidos, cóncavos, obovado-espatulados, agudos, carnosos, glabros, 3-nervados; el **dorsal** 5-6 x 1.5-2.2 mm; los **laterales** oblícuos, 5.2-6 x 1.7-3 mm. **Pétalos** lineares, redondeados, 1-nervados, 4.6 x 0.3 mm. **Labelo** unido a la columna, triobado, carnoso, 2.5-3.2 x 4-6 mm; unicalloso, el callo ligeramente bilobado; disco con 5 quillas, la central llegando hasta el ápice del labelo y las laterales más cortas; lóbulos laterales semiorbicular-subcuadrados, con el margen ligeramente eroso, 1.5 x 1 mm; lóbulo medio bilobado, los lóbulos divaricados, angostamente triangulares, recurvados hacia la parte inferior, obtusos. **Columna** recta, con dos dientes prominentes a cada lado, comprimidos lateralmente, 3-4 mm de largo. **Clinandrio** reducido, entero. **Antera** elipsoide, carnosa, 4-locular, con una quilla roma al frente. **Polinios** 4, tipo ala de pájaro, el par interior más pequeño; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido. **Róstelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/4 de la cavidad estigmática. **Nectario** sin traspasar el perianto, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Roots** thin, from the base of the stems. **Stems** erect, cane-like, terete. **Leaves** numerous, distributed throughout the stem; sheath tubular, finely striated; blade lanceolate, acuminate, green. **Floral bracts** shorter than the ovary, progressively shorter towards the apex of the branches, narrowly triangular, acuminate. **Flowers** 22-45, simultaneous, sepals and petals green, column green at base, white towards the apex, lip white, with a purple blotch at each side of the disc. **Ovary** not inflated, unornamented. **Sepals** spreading, concave, obovate-spatulate, acute, fleshy, 3-veined. **Petals** linear, rounded, 1-veined. **Lip** 3-lobed, fleshy; callus slightly bilobed; disc with 5 keels, the middle keel reaching the apical sinus; lateral lobes semiorbicular-subquadrate, margin somewhat erose; midlobe bilobate, the lobes divaricate, narrowly triangular, obtuse. **Column** straight, with two prominent, lateral teeth. **Clinandrium** reduced, entire. **Nectary** not surpassing the perianth, unornamented.

OTHER SPECIMENS: COLOMBIA: Antioquia: Boquerón, *André 4649* AMES! F! K! NY! Hort. Medellín, *Colomborquídeas sub Hágsater 11565* AMES! AMO! JAUM! QCNE! SEL! USM! *Schmidtchen s.n.* W!

OTHER RECORDS: COLOMBIA: Antioquia: Amagá, *Escobar 1059* AMO! (slide) Cited and reproduced in Orquideología 8(3): 183. 1973.

DISTRIBUTION AND ECOLOGY: Apparently restricted to the mountains west of Medellín. Flowering in December in Colombia and in cultivation in Mexico in September.

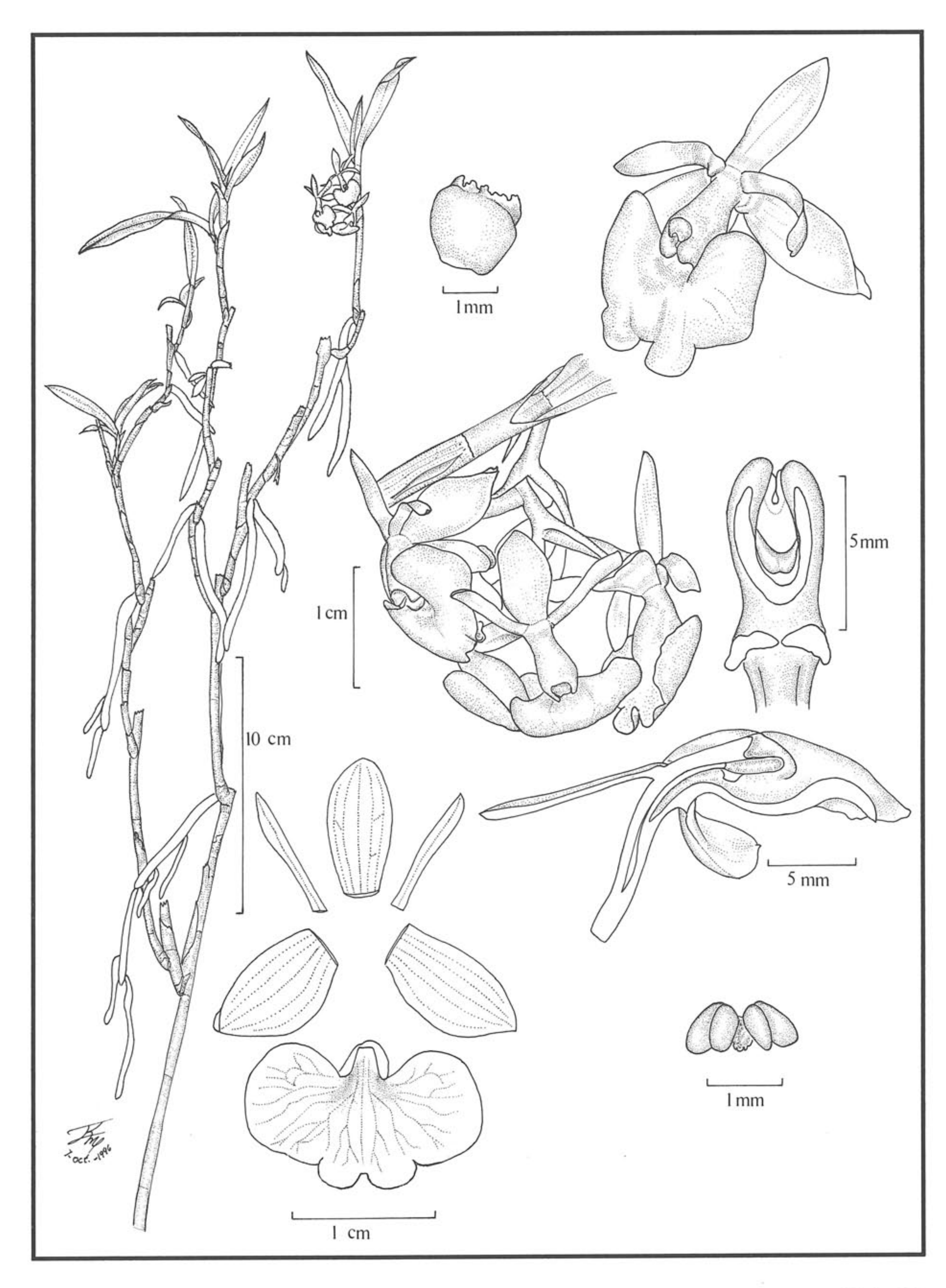


RECOGNITION: *Epidendrum agurrei* belongs to the *E. paniculatum* Ruiz & Pavón group and can be distinguished by its simultaneous flowers, 5-6 mm long sepals, 11-18 mm wide leaves, the lip marked with purple at the sides of the disk, and the floral bracts shorter than the ovary. It is closely related to *E. parviflorum*, which has smaller flowers, the sepals being 4-5 mm long, narrower leaves, 7.5-13 mm wide, and immaculate flowers. Other species with small, simultaneous flowers and immaculate lips are *E. longibracteatum* Hágsater which has prominent floral bracts often longer than the ovary; *E. gratiosum* Rchb. f. has a nearly repent plant habit. *E. yungasense* Rolfe has a longer (6 mm), slender column. *E. cirrhochilum* Lehm. & Kraenzl.n has simultaneous flowers with 7 mm long sepals, and long, acuminate apical lobes of the lip some 7 mm long, the disc marked with purple. The following species have successive flowers with immaculate lips: *E. macbridei* C. Schweinf. usually has one flower at a time; *E. subnutans* Ames & C. Schweinf. has sepals about 6 mm long, with many flowers in various stages of development on a many branched inflorescence; *E. poeppigii* Hágsater has very long, narrow leaves (9-17 x 1.2-1.7 cm).

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named in honor of Gustavo Adolfo Aguirre, of Medellín, Colombia, who cultivated and provided the live plant for the type and illustration.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM AMAYENSE Hágsater **Plate 303**

EPIDENDRUM AMAYENSE Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Medellín, Cerro del Padre Amaya, col. Sep. 1992, pressed 16 Oct. 1996. ***E. Acevedo sub Colomborquídeas sub E. Hágsater 11669*** COL! Clonotype: 8 Oct. 1996 AMO! (spirit, illustration voucher).

Epidendro curtisii A. D. Hawkes affine, sed sepalis proportione latioribus et minus acutis, petalis angustioribus 1-nervatis, labello ecalloso.

Hierba epífita de simpodio erecto, de 60 cm de alto. **Raíces** gruesas, de la base del tallo principal y en la base de las ramas superiores, de 2.5-3 mm de grosor. **Tallos** erectos, produciendo tallos sucesivos, los que a su vez ocasionalmente se ramifican, tipo caña, teretes, los tallos inferiores más largos que los tallos superiores, los tallos se producen del 4º al 6º nudo, 4-20 x 0.2-0.4 cm. **Hojas** 4-5, distribuidas hacia el ápice, deciduas, muy delgadas; vaina tubular, finamente estriada cuando seca, 8-20 mm de largo; lámina linear-lanceolada, aguda, dorsalmente carinada, 2.2-7 x 0.5-0.6 cm. **Espata** ausente. **Inflorescencia** apical, racemosa, florece una sola vez, nutante, 2-3 cm de largo; pedúnculo corto, de 1 cm de largo, con 3 brácteas angostamente triangulares, acuminadas, 9-12 mm de largo. **Brácteas florales** más cortas que el ovario, angostamente triangulares, acuminadas, 4-8 mm de largo. **Flores** 5-6, simultáneas, carnosas, amarillo-verdosas, concoloras, fragancia no registrada. **Ovario** no inflado, no ornamentado, 8-10 x 1 mm. **Sépalos** reflexos, elípticos, obtusos, glabros, 5-nervados, 9 x 4-5 mm; los **laterales** oblicuos. **Pétalos** reflexos, angostamente oblongos, oblicuos, obtusos, glabros, 1-nervados, 9 x 1.5 mm. **Labelo** oscuramente trilobulado, reniforme, convexo, ápice bilobulado, ecalloso, sin quillas, 10 x 15 mm. **Columna** recta, gruesa, 5 mm de largo. **Clinandrio** reducido, entero. **Antera** subglobosa, carnosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** reducido, apenas penetrando hasta el perianto, estrecho, no ornamentado. **Cápsula** no vista.

Sympodial epiphytic **herb**. **Roots** from the base of the stems, thick. **Stems** erect, produced from the middle of the previous stem, cane-like, terete, progressively shorter. **Leaves** 4-5, distributed towards the apex of the stems; sheath tubular, finely striated when dry; blade linear-lanceolate, acute. **Inflorescence** terminal, flowering only once, racemose, nutant, without spathe. **Floral bracts** shorter than the ovary, narrowly triangular, acuminate. **Flowers** 5-6, simultaneous, fleshy, yellowish-green, concolor. **Ovary** neither inflated nor ornamented. **Sepals** reflexed, elliptic, obtuse, 5-veined. **Petals** reflexed, narrowly oblong, oblique, 1-veined. **Lip** obscurely 3-lobed, reniform, convex, apex bilobed, ecallose, without keels. **Column** straight, thick. **Clinandrium** reduced, entire. **Anther** subglobose, fleshy, 4-celled. **Pollinia** 4, obovoid, laterally compressed, caudicles soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Lateral lobes of stigma** 1/3 the length of the cavity. **Nectary** reduced, barely penetrating as far as the perianth, narrow, unornamented.

OTHER SPECIMENS: COLOMBIA: Antioquia: El Abejoral, *Dodson et al. 15261* RPSC! Altos de Barbacoa, *Dodson et al. 15297* RPSC! El Cedro, La Ceja, *Ortiz 285* HPUJ! Boquerón occidente, *Ospina s.n.* JAUM 324! Ana María, *Ospina 647* JAUM! Televisoria Santa Elena, *Ospina 295* JAUM!

OTHER RECORDS: COLOMBIA: Antioquia: *Ortiz 285* AMO! (illustration, xerox).

DISTRIBUTION AND ECOLOGY: Known only from the surroundings of Medellín, 3150 m altitude. Flowering in cultivation in México in October.

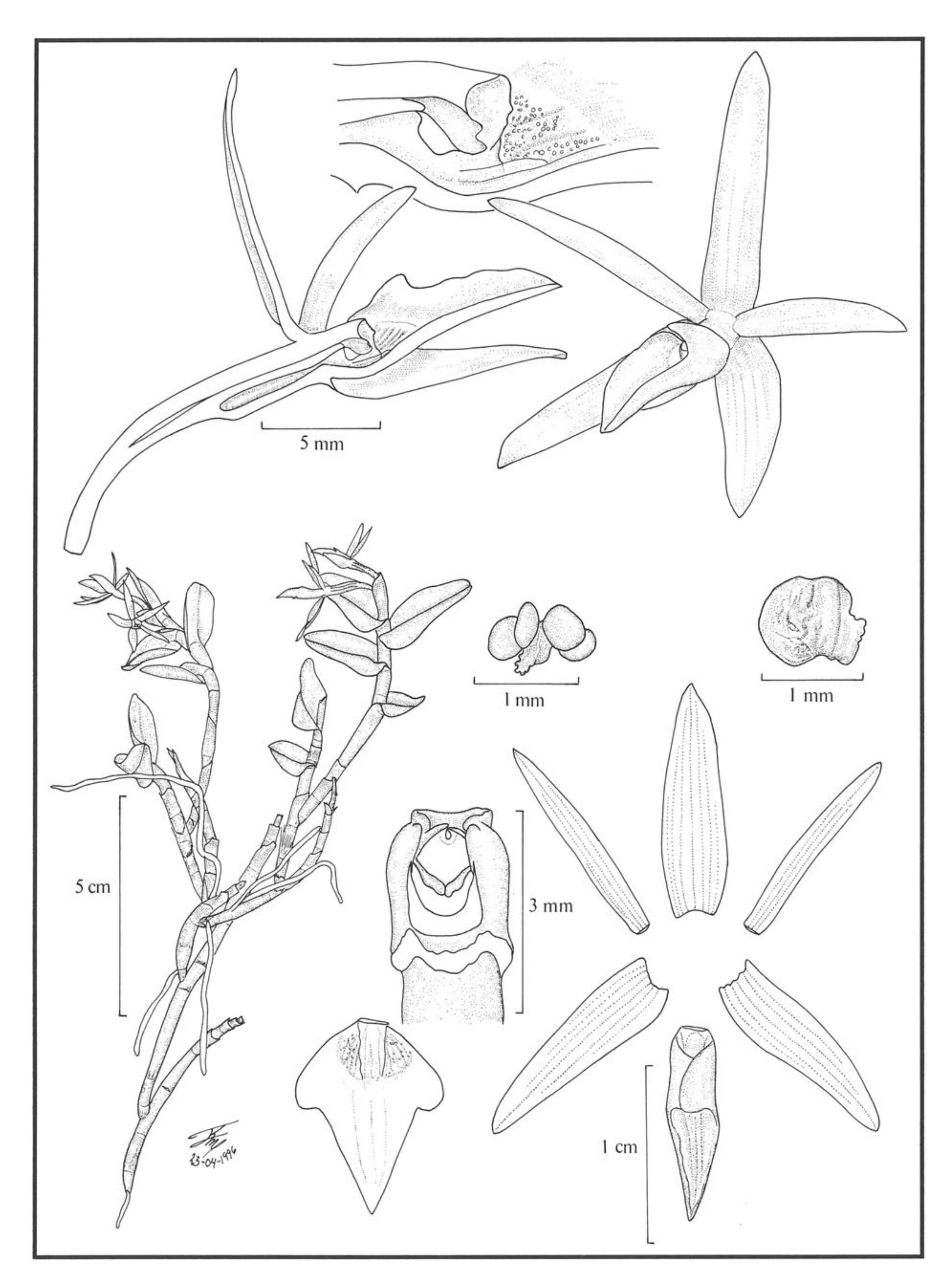


RECOGNITION: *Epidendrum amayense* belongs to the *Epidendrum arbuscula* Lindl. group with greenish, fleshy flowers and is close to *E. curtisii* but has 1-veined and narrower (1.5 mm) petals and lacks calli. *Epidendrum envigadoënse* Hágsater has wider (3.5 mm), 3-veined petals, and has small, globular calli. *Epidendrum pomecense* Hágsater has similar sized flowers, which are successive, 3-nerved sepals and a differently proportioned, bicallose lip, with a cuneate mid-lobe.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named after the locality where the type was been collected, the Cerro del Padre Amaya.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM AMPLEXIGASTRIUM Hágsater & Dodson

Plate 304

EPIDENDRUM AMPLEXIGASTRIUM Hágsater et Dodson, *sp. nov.*

Holotype: COLOMBIA: Cult. en Colomborquídeas, posteriormente en AMO, pressed 23 May 1996, ***sub J. L. Aguirre sub E. Hágsater 11545*** COL! (illustration voucher). Clonotypes: 17 Nov. 1997 AMO! 11 Dec. 1997 QCNE! SEL!

Epidendro marsupiali Lehman & Kraenzl. simile sed labelli base cuneata, lobulis lateralibus semiovatis, in positione naturali columnam tegentibus, supra illam imbricatis et suum apicem occultantibus, necnon disco excavato papilloso, recedit.

Hierba epífita, reptante, hasta 18 cm de alto. **Raíces** basales, delgadas, carnosas, blancas, de 0.8-1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, ligeramente engrosados hacia la parte media, carnosos, formados por 6-8 entrenudos, el tallo nuevo originándose del 4º ó 5º nudo del tallo anterior, 2.5-8 x 0.28-0.42 cm; la mitad basal cubierta por vainas no foliosas, que con el tiempo se deshacen dejando el tallo desnudo. **Hojas** 3-5, desiguales, distribuidas hacia la mitad apical del tallo; vaina lisa y verde-rojiza cuando frescas, con barras transversales amoratadas; lámina carnosa, con la parte abaxial mirando al sustrato, ovada, bilobada, sulcada, con una quilla baja en el dorso, más prominente hacia la base y el ápice, coloración en el en el envés verde oscuro, frecuentemente con barras amoratadas transversales, haz verde oscuro a amoratada casi sin color verde, 1-2.9 x 0.7-1.4 cm. **Espata** conduplicada, angostamente obovada, obtusa, 1.2 x 0.4-0.6 cm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, racemosa, corta; pedúnculo de 8 mm de largo, oculto dentro de la espata. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, de 3-6 x 1.2 mm. **Ovario** ligeramente inflado ventralmente en el tercio apical, terete, no ornamentado, 12-15 x 1.8 mm. **Flores** 2, no resupinadas, simultáneas, cobrizas, las nervaduras de los sépalos y pétalos rojizas, el lóbulo medio del labelo verde claro, en ocasiones con ligera fragancia nocturna. **Sépalos** entreabiertos, angostamente lanceolados, agudos, 7-nervados, 12-14 x 3 mm; el **dorsal** extendido; los **laterales** oblicuos. **Pétalos** entreabiertos, linear-elípticos, agudos, 3-nervados, 12-13 x 1.6 mm. **Labelo** unido a la columna, trilobado, hastado, base cuneada, 11-12 x 8 mm; disco excavado, ornamentado con pequeñas papilas, bicalloso, callos paralelos, formando quillas longitudinales; lóbulos laterales pequeños, semiobovados, ocupando la mitad del largo del labelo, abrazando y ocultando a la columna, empalmándose arriba de esta; lóbulo medio triangular, agudo. **Columna** corta, gruesa, 3 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de la mitad de largo de éste. **Nectario** penetrando 1/3 del ovario, ensanchado dentro del ovario formando una vesícula alargada, no ornamentado. **Cápsula** no vista.

Repent epiphyte. **Roots** basal, thin. **Stems** terete, thickened, fleshy, the new stem arising from the middle of the previous stem. **Leaves** 3-5, unequal, distributed throughout the apical half of the stem, deep green variously colored with purple, frequently transversely barred with purple; sheath smooth; blade articulate, ovate, apex bilobed. **Spathe** conduplicate, narrowly obovate, obtuse. **Inflorescence** apical, from mature stem, flowering only once, racemose. **Floral bracts** much shorter than the ovary, narrowly triangular, acuminate. **Ovary** somewhat inflated ventrally at the apical third, unornamented. **Flowers** 2, non-resupinate, simultaneous, copper colored with veins of sepals and petals reddish, apical lobe of lip light green. **Sepals** narrowly lanceolate, acute, margin somewhat revolute, 7-veined. **Petals** partly spreading, linear-elliptic, acute, 3-veined. **Lip** united to the column, 3-lobed, hastate, base cuneate; disc excavate, papillose, bicallose, the calli laminar, parallel; lateral lobes small, semiobovate, occupying about half the length of the lip, upturned in natural position so as to embrace the apex of the column hiding it and tightly overlapping; mid-lobe triangular, acute. **Column** short, thick. **Clinandrium** short, margin entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal. **Nectary** penetrating 1/3 of the ovary, widened within, unornamented.



OTHER SPECIMENS: ECUADOR: Cotopaxi: Quevedo-Latacunga, arriba de Macuchi, *Hágsater 7592 et al.* AMO! **Napo:** km 92 Quito-Baeza, *Dodson 15888 & Hirtz* RPSC! **Pichincha:** Tandapi, *Dodson 15673 et al.* RPSC!

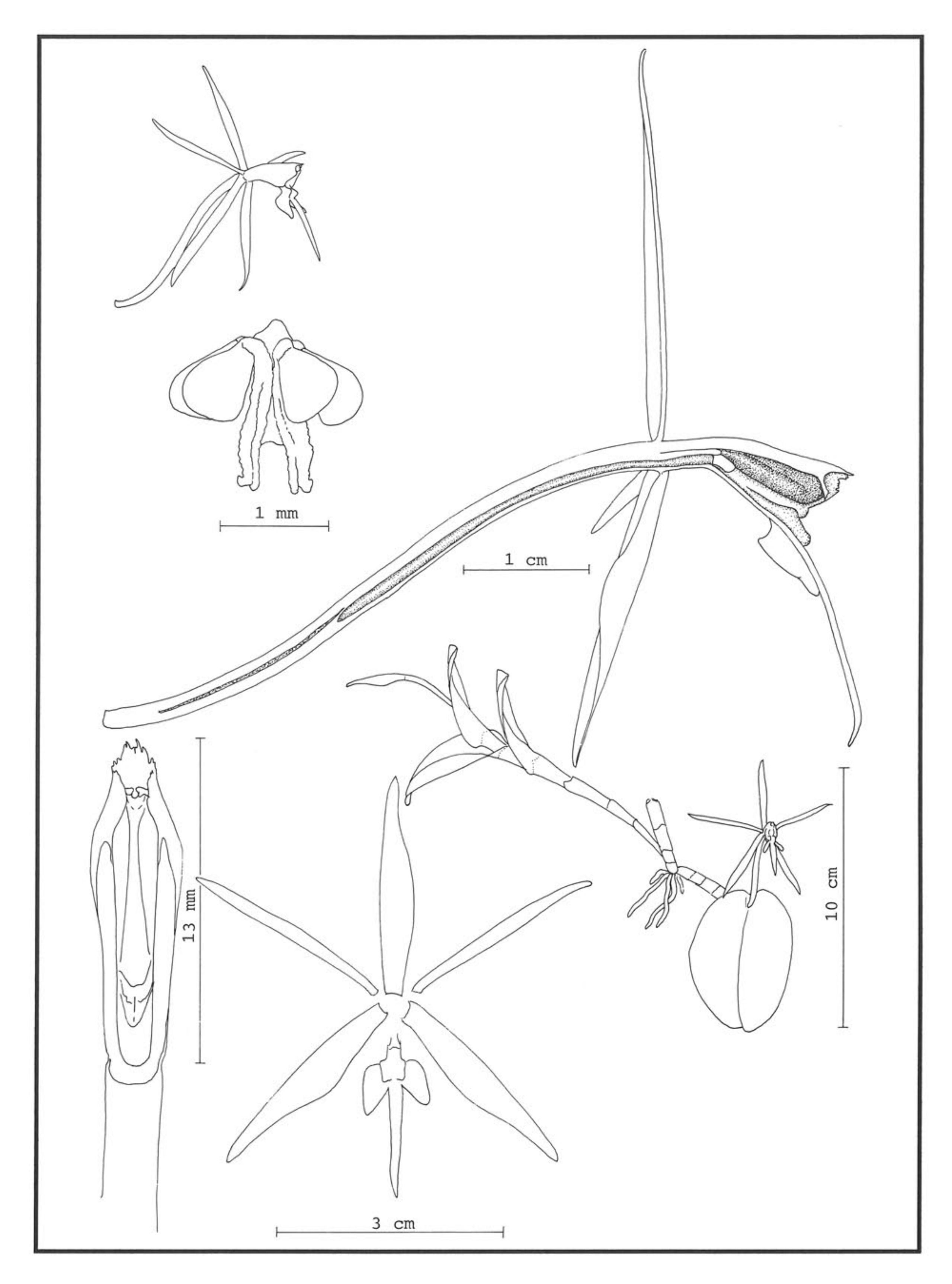
DISTRIBUTION AND ECOLOGY: Ecuador on both the Amazon and the Pacific sides of the Andes, 1100-1850 m altitude, apparently widespread but uncommon in wet forests. Colombia, known only from a cultivated plant in Medellín, the origin lost. Flowering from March to June.

RECOGNITION: *Epidendrum amplexigastrium* belongs to the *E. megagastrium* Lindl. group which is recognized by the sympodial habit, the ovate spathe and the excavated papillose disc of the lip. It is identified by the trilobed and cuneate lip, with the lateral lobes semiobovate and directed forwards, embracing the column in natural position so that the lobes are tightly overlapping over the column and hiding its apex. *E. marsupiale* is the most similar species, with a lip similar in both shape and size, but the lateral lobes are separated by deep sinuses and spreading in front of the column instead of embracing it and overlapping. *E. megagastrium* has a triangular, cordate lip and the sides do not cover the apex of the column.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Latin "*amplexor*", embracing and "*gastrium*", belly, in reference to the group of species with excavated, papillate, disc of the lip.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ANCHINOCTURNUM Hágsater

Plate 305

EPIDENDRUM ANCHINOCTURNUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca: 8 km abajo del retén de Anchicayá, 250 m. col. 27 Apr. 1983, pressed 7 Aug. 1983, ***E. Hágsater 7383, R. L. Dressler & J. Folsom*** AMO! (illustration voucher). Clonotype: 2 Jan. 1985 COL!

Epidendro nocturno Jacq. simile sed caulibus brevibus ancipitibus usque 9 cm altis, foliis 2-3 proportione latioribus et brevioribus (2:1) ovato-suborbicularibus, ovario leviter sepalis longiore.

Hierba epífita, cespitosa, de 14-16 cm de alto. **Raíces** basales, carnosas, 1.5-3 mm de grosor. **Tallos** sencillos, lateralmente comprimidos, erectos, rectos, 9 x 0.3-0.9 cm; cubiertos hacia la base por 3-4 vainas tubulares ancipitosas, papiráceas a escariosas, 1-2.7 cm de largo. **Hojas** 2-3, distribuídas en el tercio apical del tallo, coriáceas; vaina lateralmente comprimida, ancipitosa, 15-22 x 7-9 mm; lámina ovado-suborbicular, redondeado-retusa, ligeramente carinada, sulcada, de color verde limón, razón largo/ancho 2:1, 4.9-6.5 x 2.4-3.4 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, compacta, 1.2-1.4 cm de largo; pedúnculo cubierto por 1-2 brácteas, imbricadas, oblongo-triangulares, agudas, envolventes, ca. 5 mm de largo. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, agudas, 4 mm de largo. **Flores** 1-4 por racimo, abierta una a la vez por racimo, sucesivas, resupinadas, sépalos verde cobrizos, pétalos verde amarillentos, labelo y columna blancos, callos amarillo pálido, fragancia no registrada. **Ovario** terete, 40-45 x 1.5 mm. **Sépalos** extendidos, linear-lanceolados, acuminados, margen entero, 7-9-nervados, con nervaduras secundarias adicionales, 26-29 x 4-4.5 mm. **Pétalos** extendidos, lineares, acuminados, margen entero, 3-nervados en la base, 5 arriba, 25-28 x 1.5 mm. **Labelo** unido a la columna, trilobado, 17 x 9 mm; bicalloso, los callos laminares, prominentes; carina reducida; lóbulos laterales oblicuos, semiovados, ápice obtuso, margen entero, 6 x 3 mm; lóbulo medio linear, acuminado, margen entero, 14 x 1 mm. **Columna** ligeramenta arqueada cerca de la mitad, obcónica, gruesa, 13 mm de largo, 4 mm de grosor cerca del ápice. **Clinandrio** corto, ciliado a profundamente dentado. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralemente comprimidos; caudículas más largas que los polinios, suaves y granulosas; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/5 del largo de la cavidad estigmática. **Nectario** penetrando poco más de la mitad del ovario. **Cápsula** no vista; en el ovario la cavidad está en la mitad basal, por lo que en el fruto el cuerpo estará en la mitad basal con un pedicelo corto y un cuello apical largo.

Caespitose epiphyte. **Roots** fleshy. **Stems** laterally compressed, straight, simple, covered towards the base by tubular, ancipitous sheaths. **Leaves** distributed in the apical third of the stem; sheath laterally compressed, ancipitous; blade ovate-suborbicular, apex rounded and retuse, coriaceous, somewhat carinate-sulcate, length/width ratio 2:1. **Spathe** absent. **Inflorescence** apical, pluri-racemose, compact; peduncle covered by 1-2 imbricated bracts, oblong-triangular, acute. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 1-4 per raceme, successive, one at a time per raceme, sepals bronze-green, petals yellowish-green, lip and column white, calli pale yellow. **Sepals** spreading, linear-lanceolate, acuminate, margins entire, 7-9-veined with additional secondary veining. **Petals** spreading, linear, acuminate, margin entire, 3-veined at base, 5-veined above. **Lip** 3-lobed; bicallose, callus laminar, prominent; lateral lobes oblique, semi-ovate, apex obtuse, margin entire; midlobe linear, acuminate, margin entire. **Column** slightly arched near the middle. **Clinandrium** short, ciliate to deeply dentate. **Anther** obovoid, 4-celled. **Nectary** penetrating somewhat more than half the ovary.

DISTRIBUTION AND ECOLOGY: Epiphyte in tropical forest, at the foot of the Pacific slope of the Cordillera Occidental of the Andes in southern Colombia, at 250 m altitude. Flowering in cultivation in Mexico in January and August, possibly throughout the year.

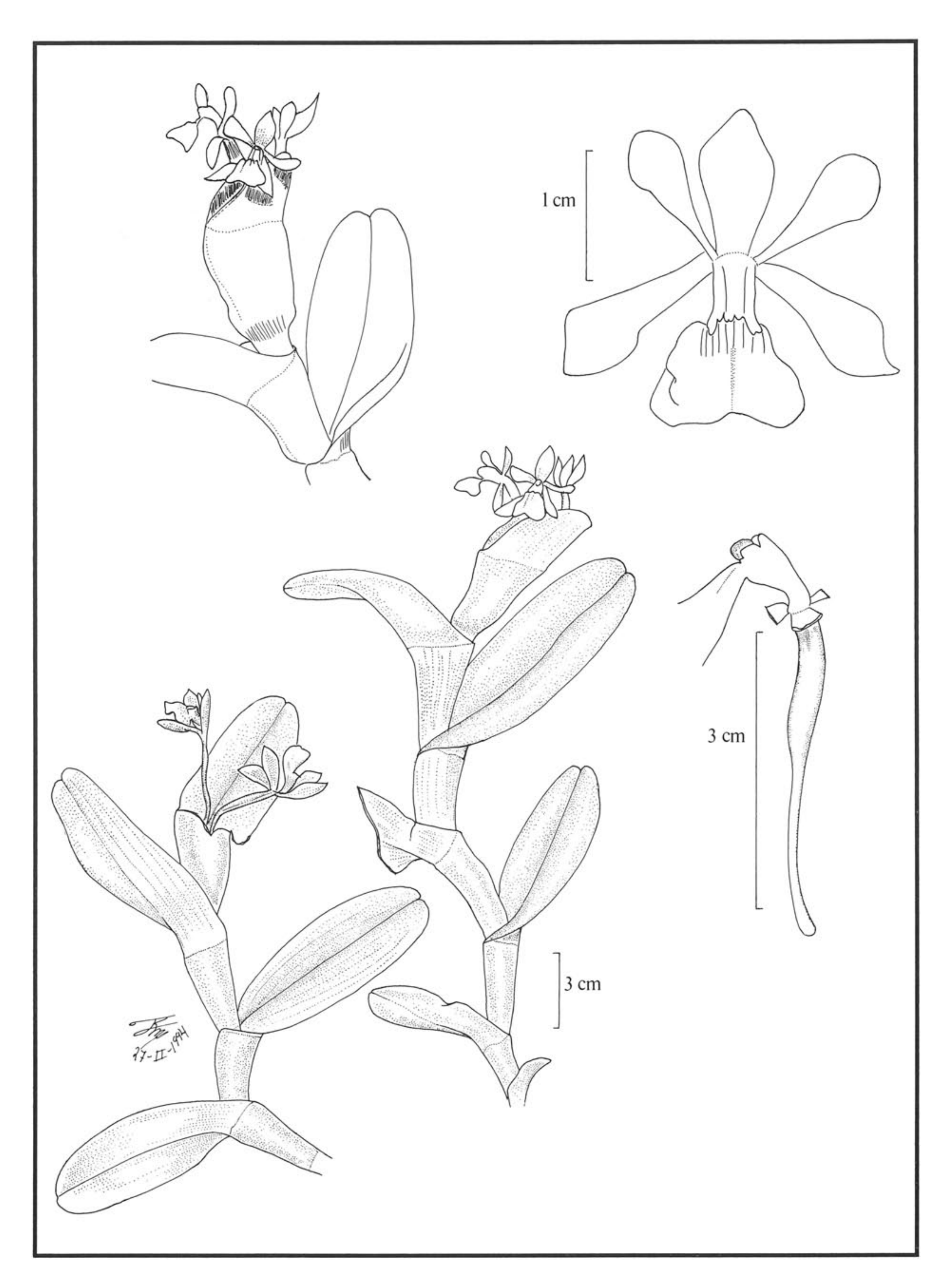


RECOGNITION: *Epidendrum anchinocturnum* belongs to the *E. nocturnum* group and can be easily recognized by the short stems (9 cm high), short and wide leaves, with a length/width ratio of 2:1, unique to this group of species. *Epidendrum buenaventurae* Schltr. from the same area has much taller plants (25-40 cm) and longer/narrower leaves (7-15 x 1-2.4 cm). *E. litense* Hágsater & Dodson, from northern lowland Ecuador, has approximately the same size plants and flowers, but much narrower, longer leaves (4-8 x 0.7-0.9 cm [note that in the original description of that species the measurements are incorrect]). Other species in this group, with similar length/width ratio have larger plants and very long ovaries, several times longer than the floral segments, like *E. macroophorum* Hágsater & Dodson and *E. latifolium* (Lindl.) Garay & Sweet.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the type locality, near Anchicayá, and the *E. nocturnum* group to which it belongs. Also in allusion to the wide leaves, from the Spanish *"ancho"*, wide, which turns to *"anchi"* when used as a prefix.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ANDREI Hágsater & L. Sánchez

Plate 306

EPIDENDRUM ANDREI Hágsater et L. Sánchez, *sp.nov.*

Holotype: COLOMBIA: [Valle del Cauca]: Cauca, Tambores, Quindío, 15 Mar. 1976, ***E. F. André 2420*** K! (illustration voucher).

Epidendro apagano Mansf. simile sed caulibus ancipitibus, sepalis obovatis, petalis spathulatis, labello obtrapezoidali, clinandrio brevi eroso.

Hierba epífita, cespitosa, 14-29 cm de alto. **Raíces** basales, carnosas, delgadas, 1-1.5 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, ligeramente flexuosos, 8-24 x 0.5-1.5 cm. **Hojas** 4-6, equidistantes a lo largo del tallo, coriáceas; vainas ancipitosas, lisas, 2-4 cm de largo; lámina elíptica, retusa a bilobada, carina dorsal baja, 5-10 x 2-3.5 cm. **Espata** ausente. **Inflorescencia** apical, en el tallo maduro, florece una sola vez, sésil. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas. **Flores** 2-3, resupinadas, simultáneas, verdes. **Ovario** ligeramente inflado ventralmente en la mitad apical, terete, 25-35 x 2-3.4 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, obovados, margen revoluto, 17-20 x 5-6 mm; el **dorsal** redondeado; los **laterales** oblicuos, agudos. **Pétalos** extendidos, espatulados, redondeados, margen extendido, membranáceos, 17-19 x 4-5 mm. **Labelo** unido a la columna, entero, base truncada, obtrapezoide al extenderse, margen entero, ápice entero, subcoriáceo, 10 x 12 mm; aparentemente ecalloso, carina baja, la cual se prolonga hasta el ápice. **Columna** recta, 9-10 mm de largo. **Clinandrio** corto, eroso.

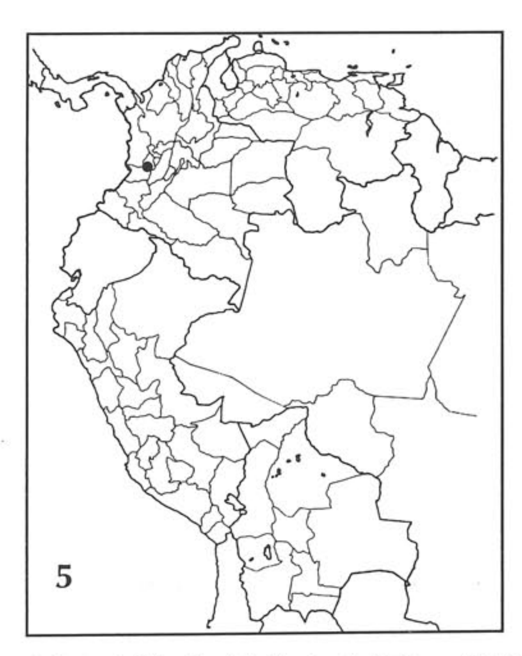
Caespitose, epiphytic **herb**. **Stems** simple, reed-like, ancipitous, slightly flexuose. **Leaves** 4-6, blade elliptic, apex retuse to bilobed. **Inflorescence** apical, sessile. **Floral bracts** much shorter than the ovary, ovate, acute. **Flowers** 2-3, resupinate, simultaneous, green. **Ovary** slightly inflated ventrally in the apical half, terete. **Sepals** spreading, glabrous, free, obovate, rounded, margin revolute; the **laterals** oblique, acute. **Petals** spreading, spathulate, rounded, membranaceous. **Lip** adnated to the column, entire, obtrapezoide; aparently ecallose. **Column** straight. **Clinandrium** short, erose.

DISTRIBUTION AND ECOLOGY: Known only from the type from the Valley of the River Magdalena, epiphyte, in wet forest. Flowering in March.

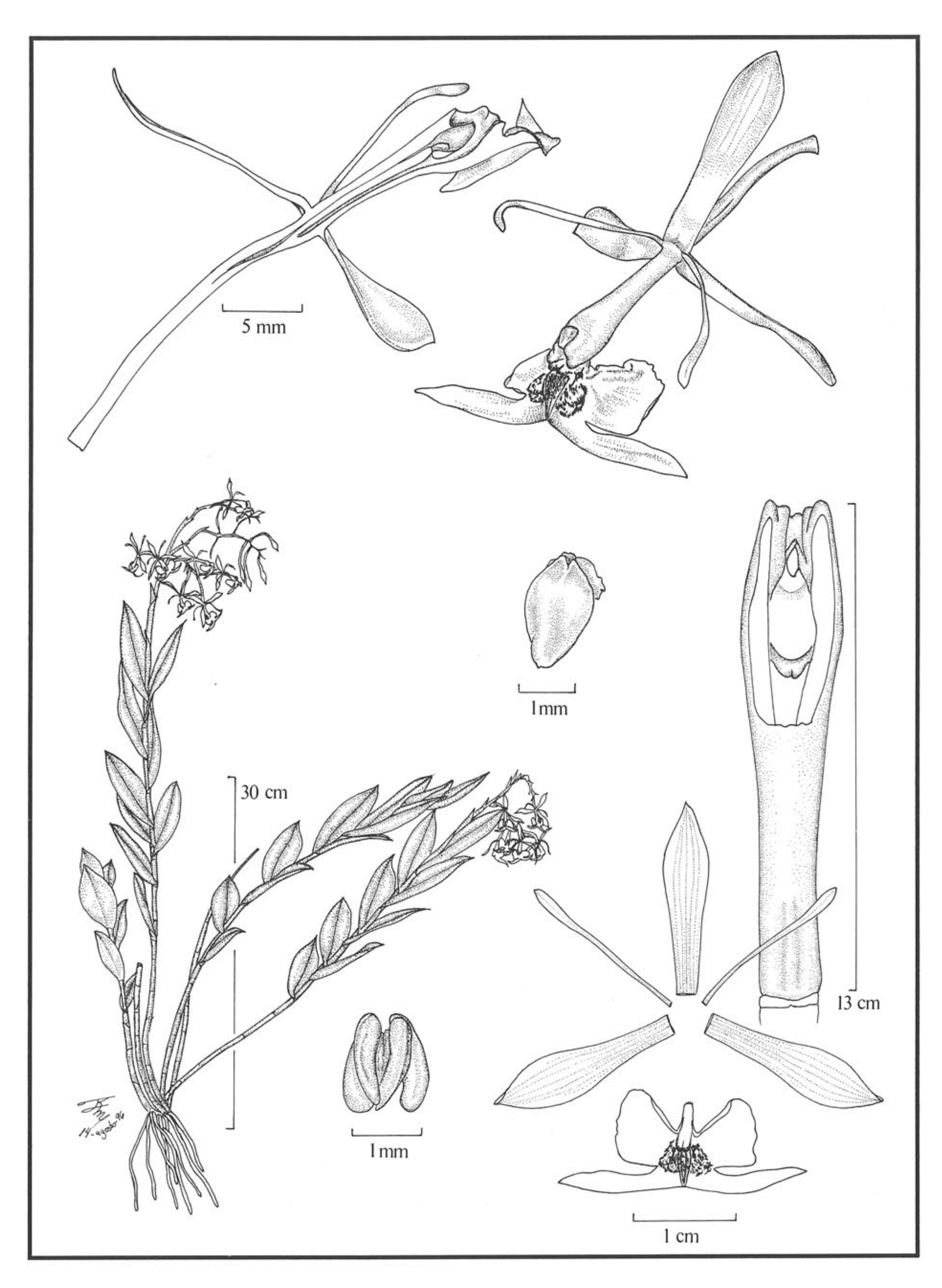
RECOGNITION: *Epidendrum andrei* is member of the *E. difforme* Jacq. group and can be recognized by its ancipitose stems, small, green flowers, sepals obovate, petals spathulate, lip obtrapezoid, short, erose clinandrium. It differs from *E. apaganum*, which has elliptic sepals and petals, 3-lobed lip, dentate lateral lobes, triangular, obtuse midlobe and a fimbriate-dentate clinandrium. *Epidendrum killipii* Hágsater & L. Sánchez has larger plants, laterally compressed stems, larger flowers with elliptic sepals and rhombic petals, suborbicular-cordiform lip, subglobose callus and a prominent, dentate clinandrium.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Dedicated to Edouard François André, who collected the material from which the type specimen was prepared, and presumably prepared the water color that is on the type sheet.



Authors: E. Hágsater & L. Sánchez Saldaña   Illustrator: R. Jiménez M.   Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz
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EPIDENDRUM ANGARITAE Hágsater

Plate 307

EPIDENDRUM ANGARITAE Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Municipio: Dabeiba, Patio Rico, 1800 m, cult. en Colomborquídeas, col. May 1995, pressed 11 Sep. 1996, ***H. Angarita sub E. Hágsater 11625*** AMO! (illustration voucher). Clonotypes: 18 Nov. 1996 COL! 12 Sep. 1997 AMES! JAUM! 3 Oct. 1997 SEL! 6 Jul. 1998 MO! QCNE!

Epidendro paniculato Ruiz & Pavón simile sed sepalis brunneis, labello inter lobuli medii extensi lobulos multo latiore, lobulis lateralibus lineam horizontalem facientibus, floribus successivis et inflorescentia paniculata ramos novos in quoque anno efferentibus, recedit.

Hierba epífita, cespitosa, 30-55 cm de alto. **Raíces** basales, carnosas, 1.3-2 mm de grosor. **Tallos** erectos, rectos, tipo caña, lateralmente comprimidos hacia el ápice, 26-40 x 0.2-0.4 cm; cubiertos en la base por vainas tubulares, papiráceas, de color verde-morado, de 2-3.5 cm de largo. **Hojas** 7-9, distribuidas en los 2/3 apicales del tallo, erectas, en el mismo plano del tallo; vaina tubular, 2-3 x 0.4-0.5 cm; lámina articulada, elíptica a angostamente elíptica, acuminada, gramínea, ligeramente marcada por 6 nervaduras longitudinales claramente visibles a contraluz dándole un aspecto ligeramente ondulado, verde-rojizo oscuro por el haz, rojizas por el envés, 4-10.6 x 1.8-3 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, más larga que las hojas apicales, generalmente formada por racimos laxifloros, alargados, paniculada, florece durante varios años del mismo pedúnculo, produciendo nuevos racimos de los nudos intermedios, 9-26 cm de largo; pedúnculo alargado, ligeramente arqueado, 5-10.5 cm de largo; cubierto cuando joven por 4 brácteas conduplicadas, acuminadas, 3-5 cm de largo; raquis 2-10 cm de largo. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, acuminadas, 3-17 x 2-5 mm. **Flores** 3-16 por racimo, sucesivas, varias flores abiertas a la vez, verde olivo, los sépalos pardos por el envés, base de columna y pétalos verde claro, ápice de columna y labelo blancos, el disco morado con rayas finas, lo blanco tornándose amarillento, antera color crema, fragancia nocturna débil. **Ovario** filiforme, no inflado, no ornamentado, 20-35 mm de largo. **Sépalos** extendidos, angostamente obovados, subespatulados, agudos, carnosos, 5-nervados, 15-17 x 4-4.5 mm. **Pétalos** filiformes, ligeramente ensanchados hacia el ápice, obtusos, 1-nervados, 15-17 x 0.9 mm. **Labelo** unido a la columna, trilobado, base profundamente cordada, membranoso, 8-9.3 x 20-23 mm; bicalloso, callos laminares; disco con tres quillas romas, carnosas, la central hasta el seno apical; lóbulos laterales dolabriformes, margen entero, sinuoso, 6-7 x 5-6; lóbulo medio bilobado, los lóbulos angostamente lanceolados, fuertemente divaricados, formando una línea horizontal, cada lóbulo 10 x 1.5-1.8 mm. **Columna** recta, delgada, termina en un par de ángulos agudos a los lados del rostelo y un par de dientes junto a los callos, 13 mm de largo. **Clinandrio** reducido. **Antera** ovoide, con una quilla roma muy baja al frente, 4-locular. **Polinios** 4, tipo ala de pájaro, translúcidos, los interiores algo más pequeños; caudículas laminares; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** apenas penetrando el perianto, estrecho, no ornamentado. **Cápsula** no vista.

Caespitose, epiphytic **herb**. **Roots** fleshy. **Stems** laterally compressed toward the apex, covered by tubular sheaths on basal 1/3, upper 2/3 by leaf-bearing tubular sheaths. **Leaves** elliptic to narrowly elliptic, acuminate, deep reddish-green, marked by longitudinal veins. **Inflorescence** apical, from mature stem, longer than apical leaf, flowering over several years, each flowering racemose, rarely paniculate; peduncle provided with conduplicate, acuminate bracts. **Floral bracts** narrowly triangular, acuminate, shorter than the ovary. **Flowers** 3-16 per raceme, successive, several open at the same time, sepals olive-green, brown outside, base of column and petals light green, apex of column and lip white with disc finely purple-striped. **Ovary** filiform, no inflated. **Sepals** spreading, narrowly obovate, subspatulate, acute, fleshy, 5-veined. **Petals** filiform, obtuse, 1-veined. **Lip** 3-lobed, deeply cordate at the base; bicallose, callus laminar; 3-keeled; lateral lobes dolabriform; midlobe bilobate, the lobes narrowly lanceolate, strongly divaricate. **Column** slender, straight, ending in a tooth on each side. **Pollinia** 4, bird-wing type, translucent, the inner pair slightly smaller; caudicles laminar; viscidium semiliquid. **Nectary** barely penetrating as far as the perianth, narrow, unornamented.



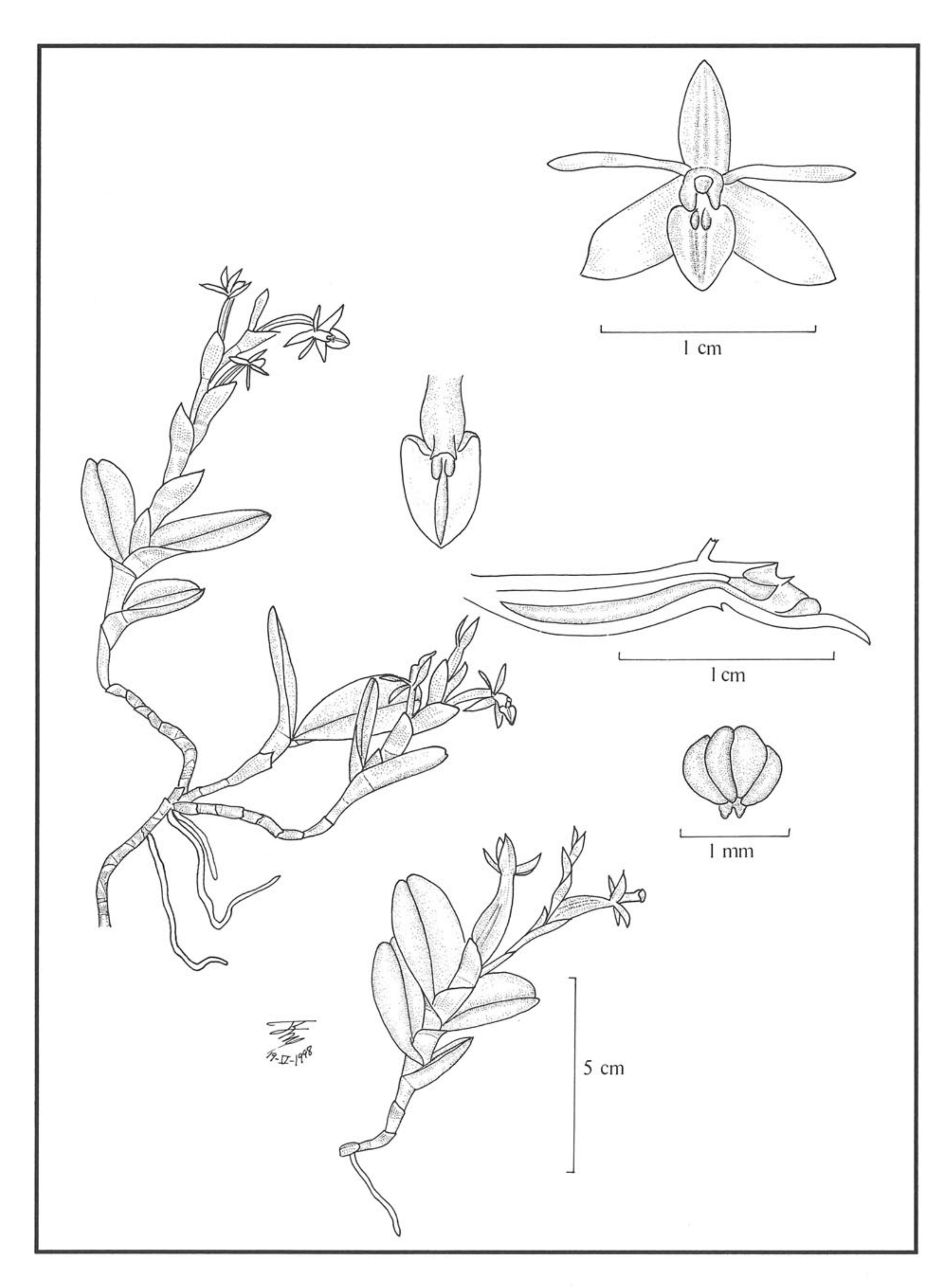
DISTRIBUTION AND ECOLOGY: Known only from the western slope of the Cordillera Occidental. Flowering throughout the year.

RECOGNITION: *Epidendrum angaritae* is a member of the *E. paniculatum* subgroup, has olive-green to brown sepals 15-17 mm long, petals and base of column light green and with apical half and lip creamy white, with the disc finely striped with purple, forming a very fine pattern. The lip is much wider across the apical lobes (23 mm) which are horizontal, than across the lateral lobes (13 mm). It is unusual because of the few flowers and the inflorescence which normally produces a lax-flowered raceme, and then continues producing further racemes over a period of several years, thus combining a feature typical of the *E. turialvae* Rchb. f. subgroup and quite uncommon in the *E. paniculatum* subgroup, therefore linking both subgroups. Other species in the area of Medellín with paniculate inflorescences include *E. ionodesme* Schltr. with dirty pink flowers and *E. lopezii* Hágsater with flowers grayish inside, pinkish outside, the disk of the lip green with purple callus and keels.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Hector Angarita of Medellín, collector of orchids, especially in the area of Dabeiba, who collected the specimen.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ANGUSTISEGMENTUM (L. O. Williams) Hágsater — Plate 308

EPIDENDRUM ANGUSTISEGMENTUM (L. O. Williams) Hágsater, *comb. et stat. nov.*

Basionym: *Epidendrum rigidum* Jacq. var. *angustisegmentum* L. O. Williams, Ann. Missouri Bot. Gard. 33(4): 371. 1946. Holotype: PANAMA: Bocas del Toro: Water Valley, vicinity of Chiriquí Lagoon, ***Wedel 1708*** AMES! Isotypes: MO! US!

Hierba epífita, de simpodio rastrero o escandente, 9-14 cm de alto. **Raíces** basales, de los 4-5 nudos basales de los tallos, carnosas, ca. 1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos hacia el ápice, rectos, el tallo nuevo se origina de un entrenudo intermedio del tallo anterior (aparentemente del cuarto o quinto), 2-10 x 0.2-0.6 cm. **Hojas** 2-4, distribuidas hacia la mitad apical del tallo, alternas, coriáceas; vaina tubular, lateralmente comprimida, lisa, ca. 1 cm de largo; lámina articulada, elíptica, ápice bilobado, margen entero, lisa, verde, 2-6 x 1-2 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, erecta, 3-7 cm de largo; brácteas del pedúnculo 1-3, espaciadas, conduplicadas, ovadas, obtusas, 10-16 mm de largo; raquis lateralmente comprimido, ancipitoso, no ornamentado. **Brácteas florales** algo más cortas que el ovario, ovadas, conduplicadas, obtusas a agudas, 9-15 mm de largo. **Flores** 3-5, sucesivas, en ocasiones todas presentes en diferentes estados post antesis, concolor amarillas a amarillo-verdosas, fragancia no registrada. **Ovario** inflado ventralmente en toda su longitud, subtriquetro, no ornamentado, 15-20 mm de largo. **Sépalos** extendidos, libres, glabros, coriáceos, ovados, obtusos, margen extendido, 9-10 x 2-4.5 mm. **Pétalos** reflexos, lineares, oblanceolados, obtuso, margen extendido, 7.5-9 x 0.5-1 mm. **Labelo** unido a la columna, entero, ovado, base aparece truncada por que la base del labelo esta doblada hacia arriba, obtuso, margen entero, 5-7 x 3.0-4.5 mm; bicalloso, con una carina central roma. **Columna** recta, ligeramente arqueada en la base, 5 mm de largo. **Clinandrio** reducido, entero. **Antera** ovada, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** hendido, subapical. **Nectario** penetrando todo el ovario, inflado en toda su longitud, no ornamentado. **Cápsula** ovoide, sésil, ca. 25 x 7 mm.

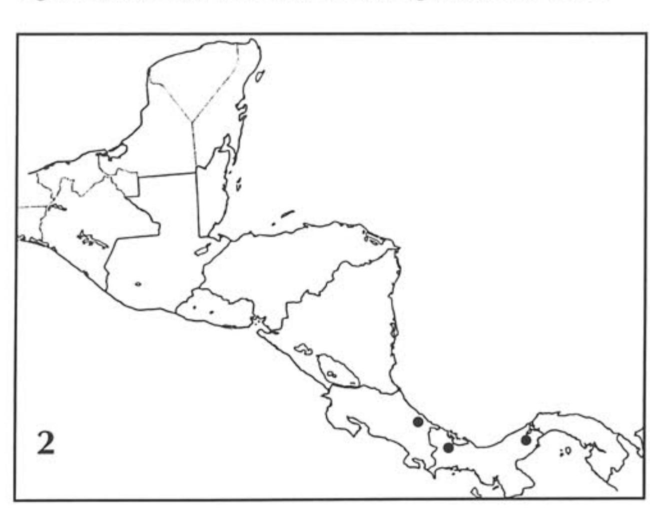
Epiphytic, creeping or scandent **herb**. **Stems** short, arising from an intermediate internode of the previous stem. **Leaves** 2-4, alternate, clustered towards the apical half of the stem, coriaceous, elliptic, apex bilobate. **Inflorescence** apical, racemose; peduncle bracts conduplicate, spaced; rachis laterally compressed, ancipitose. **Floral bracts** shorter than the ovary, obtuse to acute. **Flowers** 3-5, successive, sometimes all present in different stages of flowering and fruiting, concolor, yellow to greenish-yellow. **Sepals** ovate, obtuse, coriaceous. **Petals** linear, oblanceolate, obtuse. **Lip** ovate, base upturned appearing truncate, apex obtuse. **Column** slightly arched at base. **Clinandrium** reduced, entire. **Rostellum** slit, subapical. **Nectary** penetrating the full length of the ovary, inflated.

OTHER SPECIMENS: COSTA RICA: Limón: Parque Nacional Cahuita, *Todzia 512* CR! **PANAMA: Bocas del Toro:** Laguna Chiriquí and its neighborhood, *Hart 133* K! US! Ibid. *Hart 145* K! Ibid. *Wedel 485* MO! Nances Cay Island, *Wedel 586* AMES! MO! US! Water Valley, Isla Colón, *Wedel 851* AMES! MO! US! **Panama**: Zona del Canal, Barro Colorado Island, *Shattuck 649* F! MO! US!

OTHER RECORDS: COSTA RICA: Limón: Playa de Punta Cahuita, *Sáenz sub Rodríguez 1148* (specimen not seen); Illustration 648 by Rafael Lucas Rodríguez AMO! (xerox and slide, illustration voucher).

DISTRIBUTION AND ECOLOGY: Restricted to the coastal lagoons and beaches of Costa Rica and northern and central Panama, at sea level in palm grove vegetation. Flowering recorded June-December.

RECOGNITION: Closely resembling *E. cardiophorum* Schltr., *E. angustisegmentum* has short stems, 2-4 leaves short and wide in proportion, the inflorescence usually has 3-5 successive flowers in different stages from bud to fruit, the sepals are 9-10 mm long, petals 0.5-1 mm wide and nectary penetrating the full length of the pedicel. Both *E. rigidum* Jacq. and *E. cardiophorum* are closely related and have shorter floral segments, no longer than 7 mm. *Epidendrum rigidum* has a prominent, denticulate, clinandrium and floral segments are only partly open. *Epidendrum cardiophorum* has an entire, short, reduced clinandrium, spreading floral segments, more numerous flowers and longer, narrower leaves.

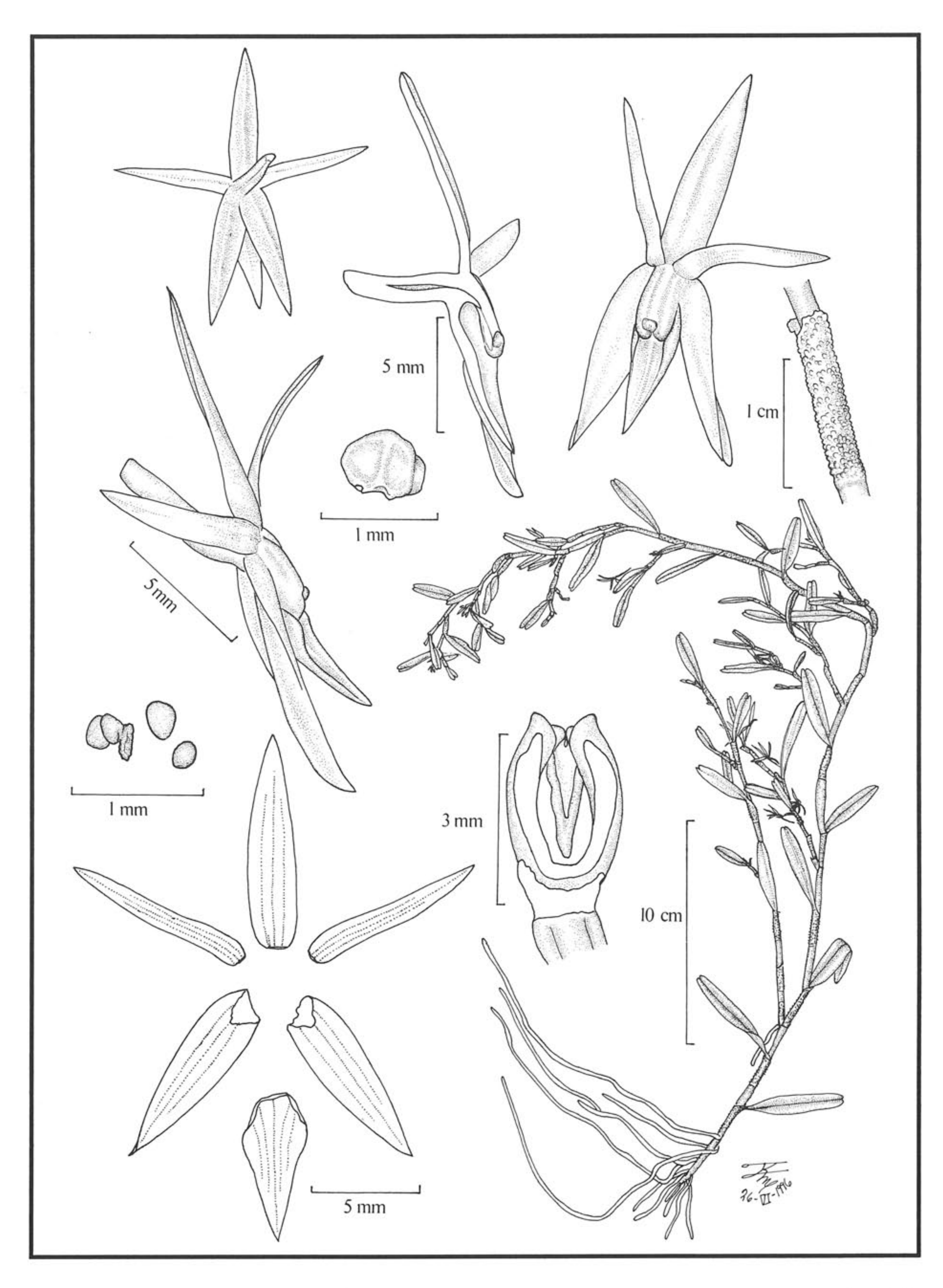


CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Latin *"angustus"* narrow and *"segmentum"* segment, probably in reference to the linear petals which distinguish this species from its closer relatives.

NOTE: The type has longer, narrower leaves than *Rafael Lucas Rodríguez 648*. The illustration voucher is based on the illustration 648 by R. L. Rodríguez.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ATRORUGOSUM Hágsater

Plate 309

EPIDENDRUM ATRORUGOSUM Hágsater, *sp. nov.*

Holotype: COSTA RICA: San José: PanAm Highway between km 18 and 20 from El Empalme to Villa Mills, 2700 m, ***M. Cruz 179*** F! (the larger specimen on the right, illustration voucher) Isotype: AMES!

Epidendro rugoso Ames simile sed columna deflexa, tepalis longioribus, acuminatis.

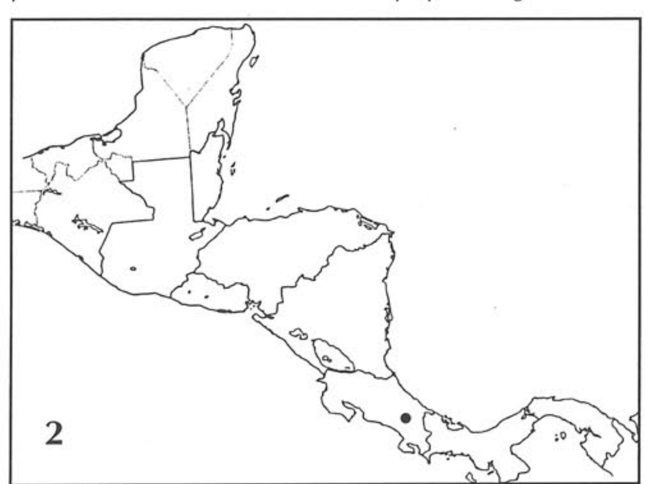
Hierba epífita, erecta, 30-55 cm de alto, toda la planta morada, aparentemente monopodial. **Raíces** producidas de los entrenudos inferiores de los tallos basales, carnosas, 1-1.5 mm de grosor. **Tallos** ramificados, tipo caña, flexuosos, teretes, glabros en la parte no cubierta por las vainas foliares; de los internudos basales o intermedios del tallo principal se producen varias ramas secundarias, y de éstas se producen las ramificaciones florales, siendo más cortas y generalmente pudiendo producir a su vez una o varias ramitas cortas cerca del ápice, tallo principal 20-51 x 0.15-0.3 cm, ramas secundarias más pequeñas, 4-18 x 0.15-0.25 cm, ramas de floración cortas, 1-2.5 cm de largo sin incluir las extensiones subapicales. **Hojas** numerosas por tallo, en las ramas florales 2-3, distribuidas a lo largo de cada tallo; vaina tubular fuertemente verrugosa, 0.5-1.4 cm de largo; lámina oblonga, ápice desigualmente bilobado, margen entero, coriácea, lisa, las de los tallos principales más grandes, 2.3-4.4 x 0.5-0.9 cm, las de las ramas secundarias menores, 2.2-3.5 x 0.4-0.7 cm, las de las ramas florales 1.5-2.4 x 0.4-0.5 cm. **Espata** ausente. **Inflorescencia** apical en las ramas florales, racemosa, dística, erecta, florece una sola vez; pedúnculo sin bráctea basal; raquis flexuoso, no ornamentado, ca. 1 cm de largo. **Brácteas florales** más cortas que el ovario, agudas, 2.5-4 mm de largo. **Flores** 2-4, sucesivas, 1-2 abiertas a la vez, color morado; botón floral recto formando un mentón en la base. **Ovario** no inflado, terete, no ornamentado, 4-5 mm de largo. **Sépalos** extendidos, libres, lanceolados, agudos, glabros, carnosos, margen extendido, 3-nervados, 9-10 x 2.4-2.6 mm; los **laterales** con quilla dorsal apical prominente, glabros. **Pétalos** extendidos, angostamente lanceolados, agudos, margen extendido, 3-nervados, 9 x 1 mm. **Labelo** unido a la columna, entero, suculento, con los lados involutos en la base, al extender triangular, acuminado, los ángulos basales redondeados, 5-nervado, 5.5 x 3 mm; ecalloso. **Columna** deflexa hacia abajo en la base con respecto al ovario, gruesa, 3.5 mm de largo. **Clinandrio** reducido, margen entero. **Antera** obreniforme, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** sin penetrar el perianto, no ornamentado, amplio. **Cápsula** no vista.

Epiphytic, erect, apparently a monopodial much branching **herb**, entirely purple. **Roots** from the base only, fleshy. **Stems** flexuous, glabrous where nude, primary stem long, producing secondary branches from the internodes, which in turn produce very short flowering branches, and these produce new, successive flowering branches from subapical internodes. **Leaves** numerous per stem, 2-3 per flowering branch; leaf-sheath strongly verrucose; blade oblong, unequally bilobed, those of the main stems larger than those of the branches, those of the flowering branches still smaller. **Inflorescences** apical, from flowering branches, racemose, flowering only once, erect, distichous. **Flowers** 2-4, purple. **Sepals** spreading, lanceolate, acute, fleshy, straight, 3-veined, the **laterals** strongly keeled. **Petals** narrowly lanceolate, acute, 3-veined. **Lip** united to the column, entire, fleshy, margins involute at base, triangular, acuminate, the basal angles somewhat rounded, 5-veined; ecallose. **Column** stout, strongly deflexed at base in relation to ovary. **Clinandrium** reduced. **Anther** obreniform, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granular; viscidium semiliquid. **Nectary** not penetrating beyond the perianth.

OTHER SPECIMENS: COSTA RICA: Ciénega 3 de junio, *Cruz s.n* CR! **San José**: Finca El Jaular, *Hágsater 8330* AMO! (slide). N of Cerro de la Muerte, *Williams 24162 et al* AMES! CR! F!

DISTRIBUTION AND ECOLOGY: Apparently endemic to the Cordillera de Talamanca around Cerro de la Muerte, at 2250-2700 m altitude. It appears to be sympatric with *E. rugosum* which, however, also grows at lower altitudes and has a much wider distribution. Epiphyte in elfin forest and tall cloud forest. Flowering in February-August.

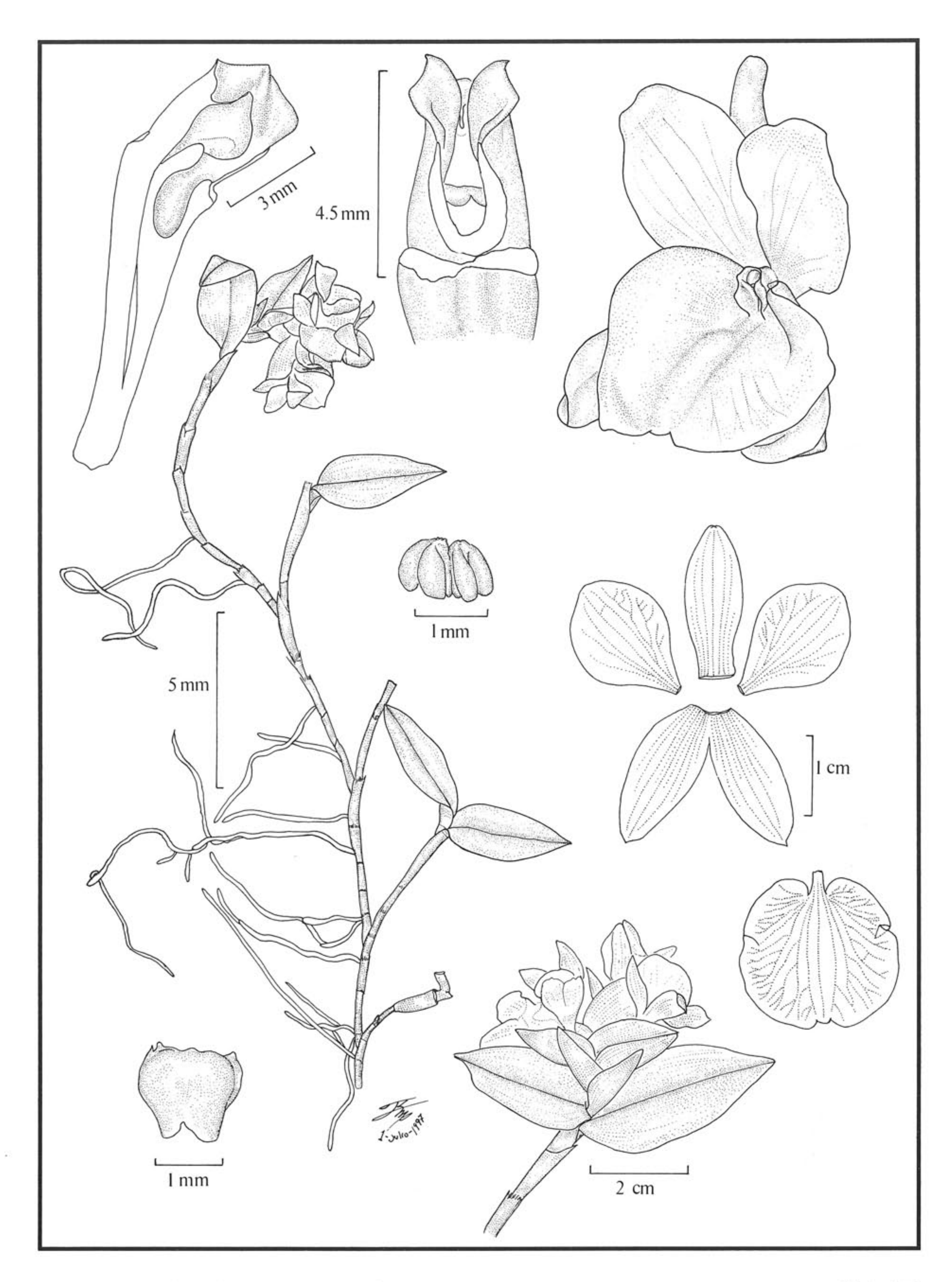
RECOGNITION: *Epidendrum atrorugosum* has successive flowers, the sepals about 9-10 mm long, acute, sepals and petals 3-veined, free, straight, lip about twice as long as broad, column bent at the base forming a nearly 90° angle with the ovary; the plants and flowers are described as dark purple throughout. It is closely related to *E. rugosum* which has smaller flowers (sepals 5-7 mm), petals 5-veined at base, the column slowly arching, not forming an angle with the ovary, lip about as long as wide, with flowers whitish, green or sometimes purple. *Epidendrum curvisepalum* Hágsater & Dressler has the lateral sepals curved outwards, though free to the base, 5-veined petals and 3 mm column. *Epidendrum sutturatum* Hágsater & Dressler has the lateral sepals not only falcate, but also connate at the base, a feature clearly visible from behind, and the 4 mm column bent at the base and forming an angle with the ovary, and 3-veined petals.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Latin "*atrans*" darkening, and "*ruga*" wrinkle, in reference to the dark purple flowers and the close relationship with *E. rugosum*.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM ATWOODCHLAMYS Hágsater

Plate 310

EPIDENDRUM ATWOODCHLAMYS Hágsater, *sp. nov.*

Holotype: COSTA RICA: Puntarenas: on border with Alajuela, collected near TV towers at 1700-1750 m. 24 June 1989. ***J. T. Atwood 89-238*** AMO! (illustration voucher). Isotypes: CR, INB, SEL (13 specimens prepared, complete distribution not registered, probably including F, MO and US).

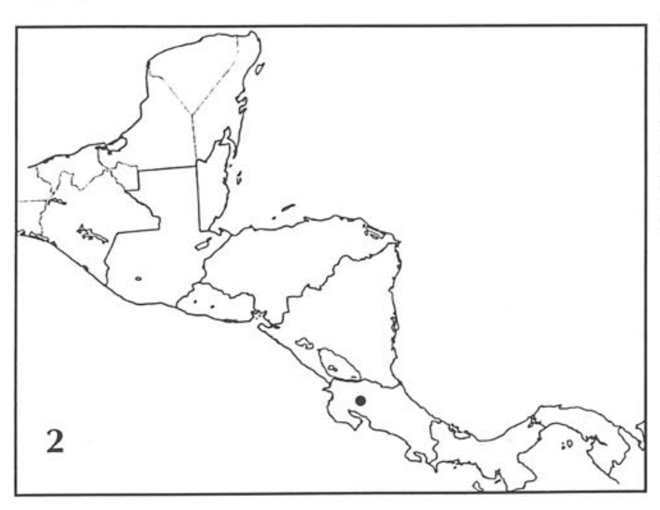
Epidendro estrellensi Ames affinis sed foliis minoribus, flore duplo majore, labello orbiculari cordato, ovario simplici.

Hierba epífita, de simpodio rastrero, 8-12 cm de alto. **Raíces** basales, escasas, distribuidas a lo largo de los entrenudos basales, carnosas, 1-1.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, arqueados, donde el tallo nuevo se origina del 4º ó 5º entrenudo intermedio del tallo anterior, 8-10 cm de largo, 2-3.5 mm de grosor, la mayor parte no foliada, cubierta cuando joven por vainas tubulares que se deshacen en fibras al segundo año. **Hojas** 2, en el ápice de cada tallo, vaina tubular, lisa, 0.7-1.0 cm de largo; lámina articulada, ovada, ápice agudo, retuso, margen entero, coriácea, estriada en seco, verde 3.3-4.8 x 1.3-2.2 cm. **Espata** ausente. **Inflorescencia** apical, racemosa, arqueada, nutante, del tallo maduro, florece una sola vez, dística, 4-6 cm de largo; raquis recto, no ornamentado; brácteas 2-3 cerca de la base, conduplicadas, ligeramente más pequeñas y agudas que las florales. **Brácteas florales** más largas que el ovario, progresivamente más cortas hacia el ápice, ovadas, conduplicadas, obtusas a redondeadas, glumáceas, 18-22 x 9-11 mm. **Ovario** recto, no inflado ni formando un espolón, dilatado en el ápice, no ornamentado, 9 mm de largo. **Flores** 4-7, más o menos simultáneas, amarillo-verdosas, en ocasiones teñidas de rojo en la base del labelo, fragancia no registrada. **Sépalos** entreabiertos, glabros, membranáceos, redondeados, margen extendido, 3-nervados, con nervaduras adicionales secundarias, 18-21 x 7-9 mm; el **dorsal** elíptico; los **laterales** ligeramente conados en la base, ovado-elípticos, rectos, dorsalmente carinados hacia el ápice. **Pétalos** entreabiertos, anchamente obovados, base cuneada, redondeados, margen extendido, membranáceos, 3-nervados, los laterales muy ramificados arriba, 17-20 x 15 mm. **Labelo** unido a la columna, entero, en forma de cucharón, abrazando a la columna y extendido hacia el ápice en posición natural, suborbicular, cordado en la base, ápice emarginado con un apículo en el seno, margen entero, 18-23 x 19-25 mm; ecalloso, con una carina central roma y ancha que llega hasta el seno apical. **Columna** recta, gruesa, con un par de alas apicales a los lados, formando un embudo con el labelo, 4.5 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, 4 locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, del mismo largo que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** poco profundo, apenas traspasando el perianto, liso interiormente. **Cápsula** no vista.

Epiphytic, repent **herb. Roots** basal, scarce, distributed along the basal internodes, fleshy. **Stems** simple, cane-like, terete, produced from a middle internode of the previous stem. **Leaves** aggregate at the apex of the stem, blade articulate, ovate, acute, retuse, coriaceous. **Inflorescence** apical, racemose, arching, nutant, from mature stem, flowers only once, distichous. **Floral bracts** longer than the ovary, conduplicate, ovate, obtuse to rounded, glumaceous. **Ovary** straight, not inflated, dilated at the apex. **Flowers** more or less simultaneous, greenish yellow, sometimes stained with red at the base of the lip. **Sepals** elliptic to ovate-elliptic, rounded, 3-veined. **Petals** widely obovate, base cuneate, rounded, 3-veined, the laterals much branching. **Lip** united to the column, entire, suborbicular, cordate at base, emarginate, short apiculate; ecallose, with a central low, wide, fleshy keel running to the apical sinus. **Column** straight, thick, with a pair of apical wings on the sides, forming a funnel. **Clinandrium** reduced, entire. **Anther** subsphaeric. **Rostellum** slit. **Nectary** very shallow, barely passing the perianth.

DISTRIBUTION AND ECOLOGY: From the highlands of western Costa Rica on the Pacific watershed, at about 1700 m. Found growing on a stump, most likely a canopy epiphyte. Flowering in June.

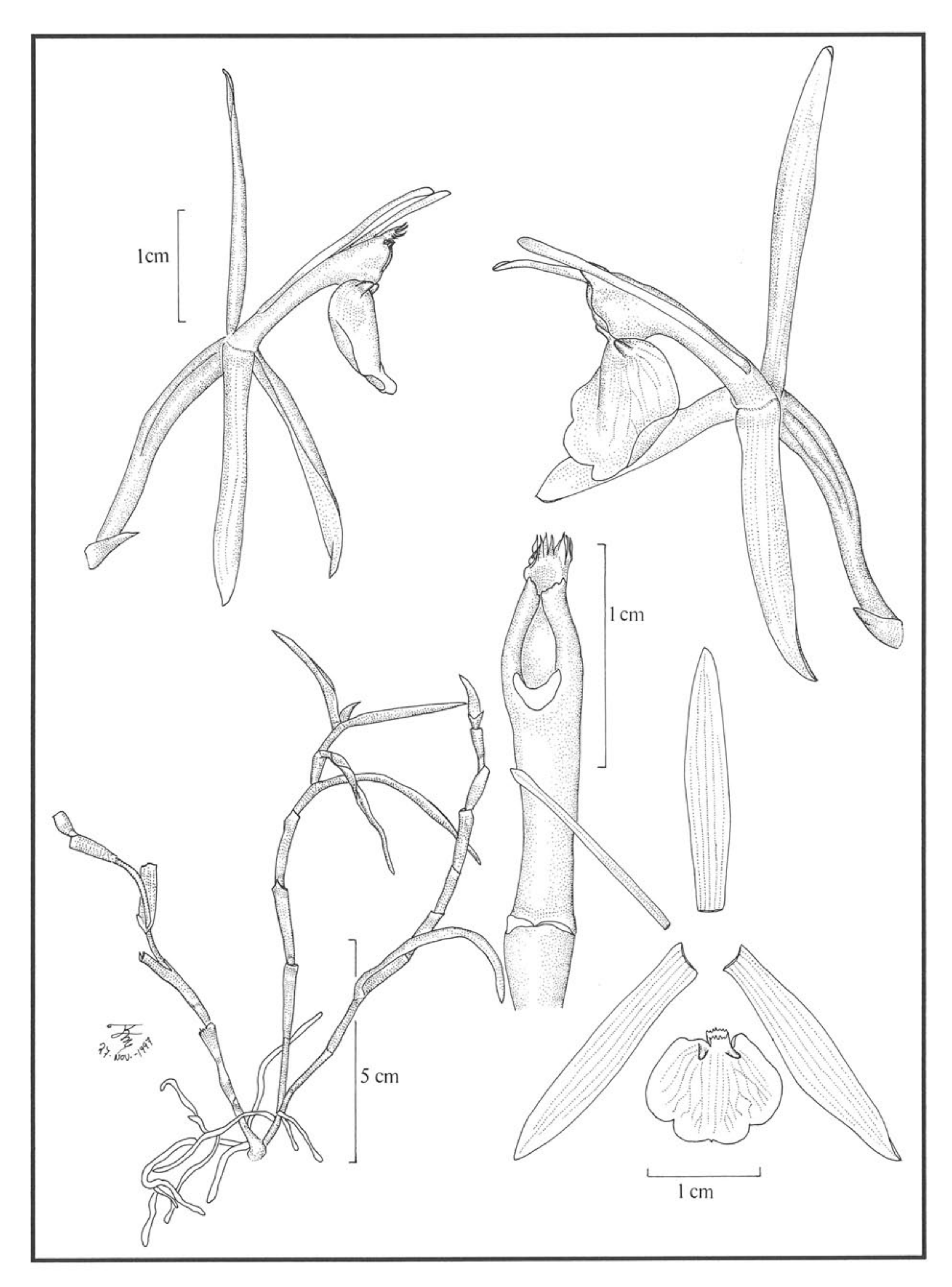
RECOGNITION: *Epidendrum atwoodchlamys* belongs to the *E. polychlamys* Schltr. group, but is distinguished from other members of the group by the short, ovate leaves, the large greenish-yellow flowers, sepals being 18-21 mm long, the simple ovary without spur and the suborbicular lip, cordate at the base. *Epidendrum estrellense* has longer leaves (8-12 cm), flowers about half the size (sepals 10 mm long). *Epidendrum polychlamys* has a suborbicular to wide-oblong, non-cordiform lip and narrow, ligulate sepals 13 mm long.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of John T. Atwood, curator of the Herbarium at the Selby Botanical Gardens, who collected the type and provided additional information and the illustration, and the Greek "*chlamys*" mantle, military cloak, in reference to the large size of the attractive flowers compared to most other species of the *E. polychlamys* group.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM ATWOODII Hágsater & L. Sánchez

Plate 311

EPIDENDRUM ATWOODII Hágsater et L. Sánchez, *sp. nov.*

Holotype: COSTA RICA: [Cartago: Turrialba]: Sin localidad precisa, comprada y cultivada por ***V. Gin Lun*** USJ! (spirit, illustration voucher).

Epidendro mantis-religiosae Hágsater simile sed sepalis lanceolatis, petalis linearibus, labello semiorbiculari usque obscure trilobato, clinandrio prominenti fimbriato.

Hierba epífita, cespitosa, 20 cm de alto. **Raíces** basales, carnosas, filiformes, 1 mm de grosor. **Tallos** sencillos, tipo caña, teretes, ligeramente flexuosos. **Hojas** 5-8, equidistantes a lo largo del tallo, ligeramenterecurvadas; vaina tubular; lámina linear-lanceolada, conduplicada en la base, aguda, 3.5-5 x 0.6-0.7 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, sésil. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 3 mm de largo. **Flores** 1, resupinada, blanco-verdosa. **Ovario** dilatado justo detrás del perianto, terete, 23-35 mm de largo. **Sépalos** extendidos, glabros, libres, lanceolados, agudos a redondeados, margen revoluto, 5-nervados, 20-25 x 3-4 mm; el **dorsal** erecto; los **laterales** ligeramente más anchos. **Pétalos** paralelos a la columna, adnados a ésta hasta cerca de 1/3 de la columna, lineares, agudos, membranáceos, 1-nervados, 23-25 x 1-1.3 mm. **Labelo** unido a la columna, reflexo con respecto al ápice de la misma, flabelado, oscuramente trilobado, base cordada, margen entero, 8-12 x 7-8 mm; bicalloso, los callos tipo cuernos, divergentes; lóbulos laterales transversalmente obovados; lóbulo medio transversalmente rectangular, con un seno amplio, apiculado. **Columna** recta, ascendente, delgada, 17 mm de largo. **Clinandrio** prominente, fimbriado. **Antera** suborbicular, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

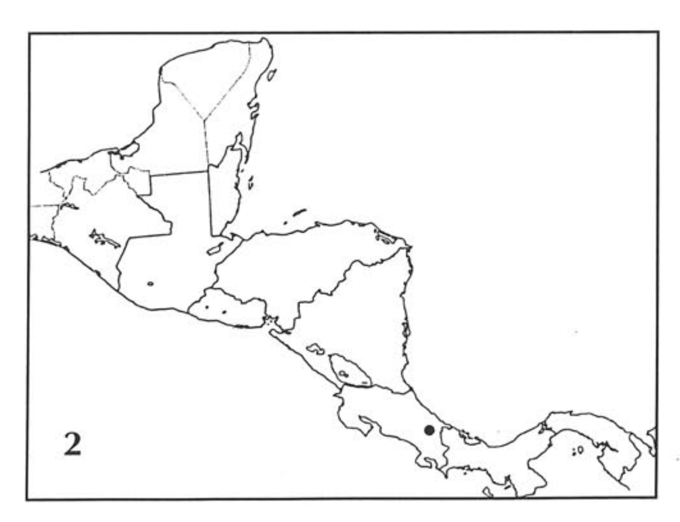
Caespitose,epiphyte. **Stems** simple, reed-like, terete, slightly flexuose. **Leaves** 5-8, linear to lanceolate, conduplicate at the base, apex acute, slightly recurved. **Spathe** absent. **Inflorescence** apical, one at a time, sessile. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 1, resupinate, greenish-white. **Ovary** dilated near the apex, terete. **Sepals** spreading, glabrous, free, lanceolate, acute to rounded, margin revolute, 5-veined; the **dorsal** erect; the **laterals** wider. **Petals** adnate to the basal third of the column, linear, acute, membranaceous, 1-veined. **Lip** adnate to the column, flabellate to 3-lobed, margin entire; bicallose, the callus horn-like, divergent; lateral lobes transversaly obovate, midlobe transversaly rectangular, apiculate. **Column** straight, thin. **Clinandrium** prominent, fimbriate. **Anther** suborbicular, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles shorter than pollinia, soft and granulose; viscidium viscous, translucent. **Rostellum** subapical, slit. **Nectary** penetrating 1/2 of the ovary, unornamented. **Capsule** not seen.

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica, on the Atlantic slopes, epiphyte, in wet forest, at 700-800 m altitude. Flowering in June.

RECOGNITION: This species can be recognized by the linear to lanceolate leaves, one at a time greenish-white flower, ovary dilated, lanceolate sepals, linear petals, adnate to the basal third of the column, 3-lobed, flabellate lip, fimbriate, prominent clinandrium. It is similar to *Epidendrum mantis-religiosae* which hasnarrowlly ovate sepals, narrowly ligulate petals adnate to the basal of the column, ovate lip, erose, short clinandrium.

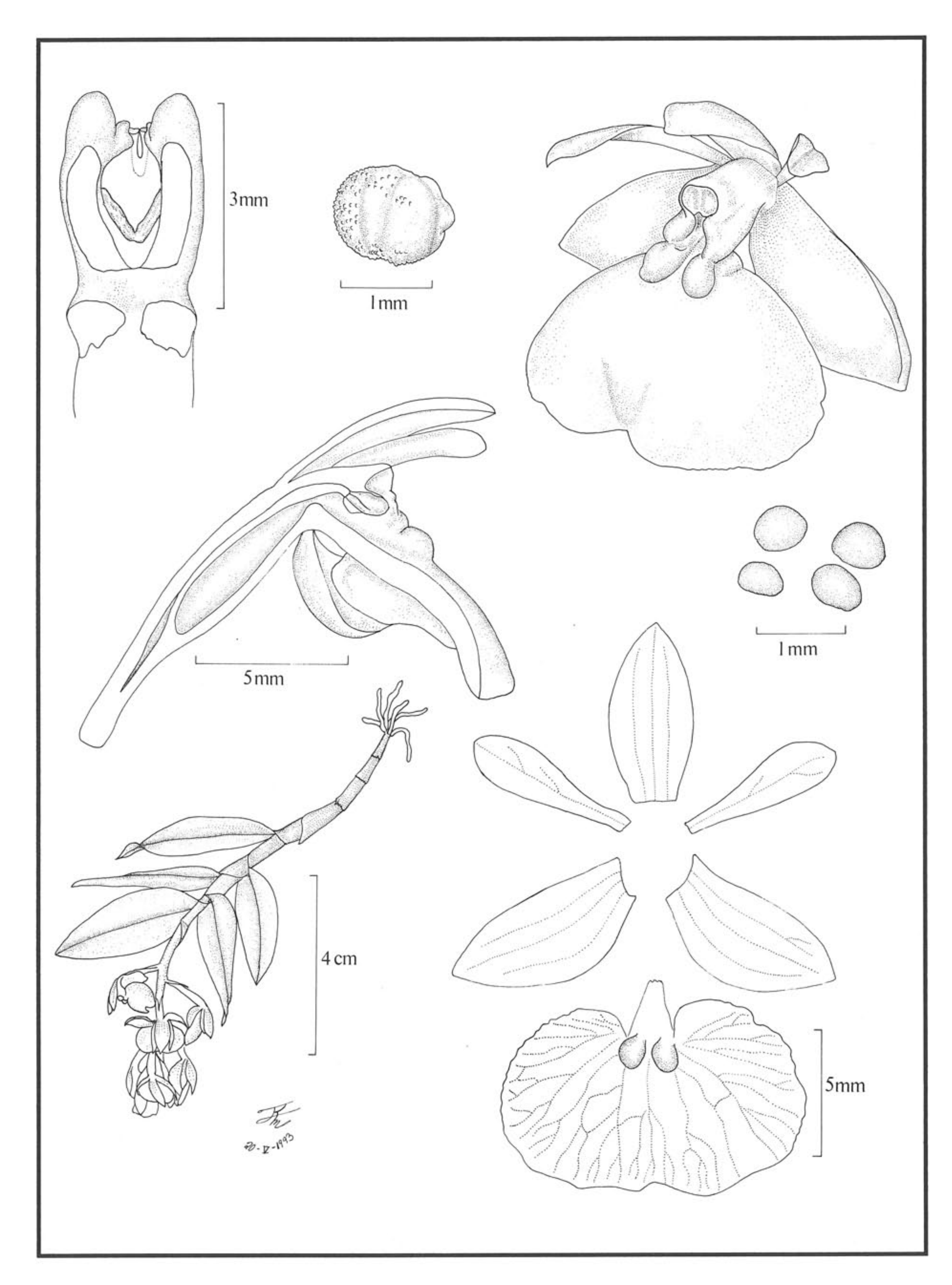
CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named in honor of Dr. John T. Atwood, director of Orchid Identification Center ofthe Marie Selby Botanical Gardens, Herbarium; who has spent several years of his life working on the orchids of Costa Rica.



Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**

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EPIDENDRUM BAKRENSE Hágsater & Cremers

Plate 312

EPIDENDRUM BAKRENSE Hágsater et Cremers, *sp. nov.*

Holotype: FRENCH GUYANA: Monts Bakra, W Pic Coudreau, 560 m, 3°18'N 52°57'W, 14 Apr. 1993, ***G. Cremers 13065*** CAY! (illustration voucher). Isotypes: AMO! (spirit) CAY!

Epidendro nephroglossum Schltr. simile sed bracteis floralibus ovario minoribus, petalis anguste obovato-spathulatis rotundatis, clinandrio carnoso, antheram tegenti et ovario ventraliter in 2/3 partibus apicalibus manifeste inflato, recedit.

Hierba epífita, escandente, 40 o más cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, el tallo nuevo se origina de un entrenudo intermedio subapical del tallo anterior, 6-7.5 x 0.2-0.4 cm. **Hojas** 4-6, distribuidas hacia la mitad apical del tallo, subcoriáceas; vaina tubular, estriada, minutamente verrugosa, 0.8-1 cm de largo; lámina articulada, angostamente ovada, aguda, margen entero, lisa, 2.5-4 x 0.9-1.4 cm.**Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, nutante, 3-5 cm de largo; brácteas del pedúnculo 1-2,acuminadas, 7 mm de largo; raquis no ornamentado. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, ca. 6 mm de largo. **Flores** 15-20, sucesivas, ca. 4-7 abiertas a la vez, resupinadas, coloración pardo verdoso, labelo pardo violáceo, verdoso en la base, columna verdosa, fragancia no registrada. **Ovario** prominentemente inflado ventralmente en sus dos tercios apicales, terete, no ornamentado, 8-11.5 mm de largo. **Sépalos** entreabiertos, elípticos, obtusos, margen extendido, sin quilla dorsal, glabros, carnosos, 3-nervados, 7-7.5 x 3.5-3.8 mm. **Pétalos** entreabiertos, angostamente obovado-espatulados, redondeados, margen entero, 1-nervados (ramificados), 7 x 2.2 mm. **Labelo** unido a la columna, entero, reniforme, ligeramente emarginado, margen eroso, 7 x 12.5 mm; bicalloso, los callos subglobosos. **Columna** corta, arqueada, con un lóbulo apical a cada lado arriba de los callos, 3.5 mm de largo. **Clinandrio**corto, carnoso, entero. **Antera** subglobosa, superficie granulosa, 4-locular. **Polinios** 4, subglobosos. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** inflado, penetrando 2/3 partes del ovario. **Cápsula** no vista.

Scandent epiphytic **herb. Roots** from the base of each stem, fleshy. **Stems** single, cane-like, terete, the new stem produced from a subapical internode of the previous stem. **Leaves** 4-6, narrowly ovate, acute, subcoriaceous; sheath striate, minutely verrucose. **Inflorescence** apical, from the mature stem, nodding, racemose. **Floral bracts** shorter than the ovary, triangular,acuminate. **Flowers** 15-20, successive, ca. 4-7 open at a time, resupinate, sepals and petals greenish-brown, lip violet-brown, greenish at base, column greenish. **Ovary** prominently inflated ventrally in the apical two thirds. **Sepals** elliptic, obtuse, 3-veined. **Petals** narrowly obovate-spathulate, rounded, 1-veined (branched). **Lip** entire, reniform, somewhat emarginate; bicallose, the callus subglobose. **Column** arched, with a pair of apical lobes above the callus. **Clinandrium** short, fleshy, entire. **Nectary** inflated, penetrating two-thirds of the ovary.

DISTRIBUTION AND ECOLOGY: Known only from French Guyana, epiphytic in groves on rocks to inselberg, 560 m altitude. Flowering in April-May.

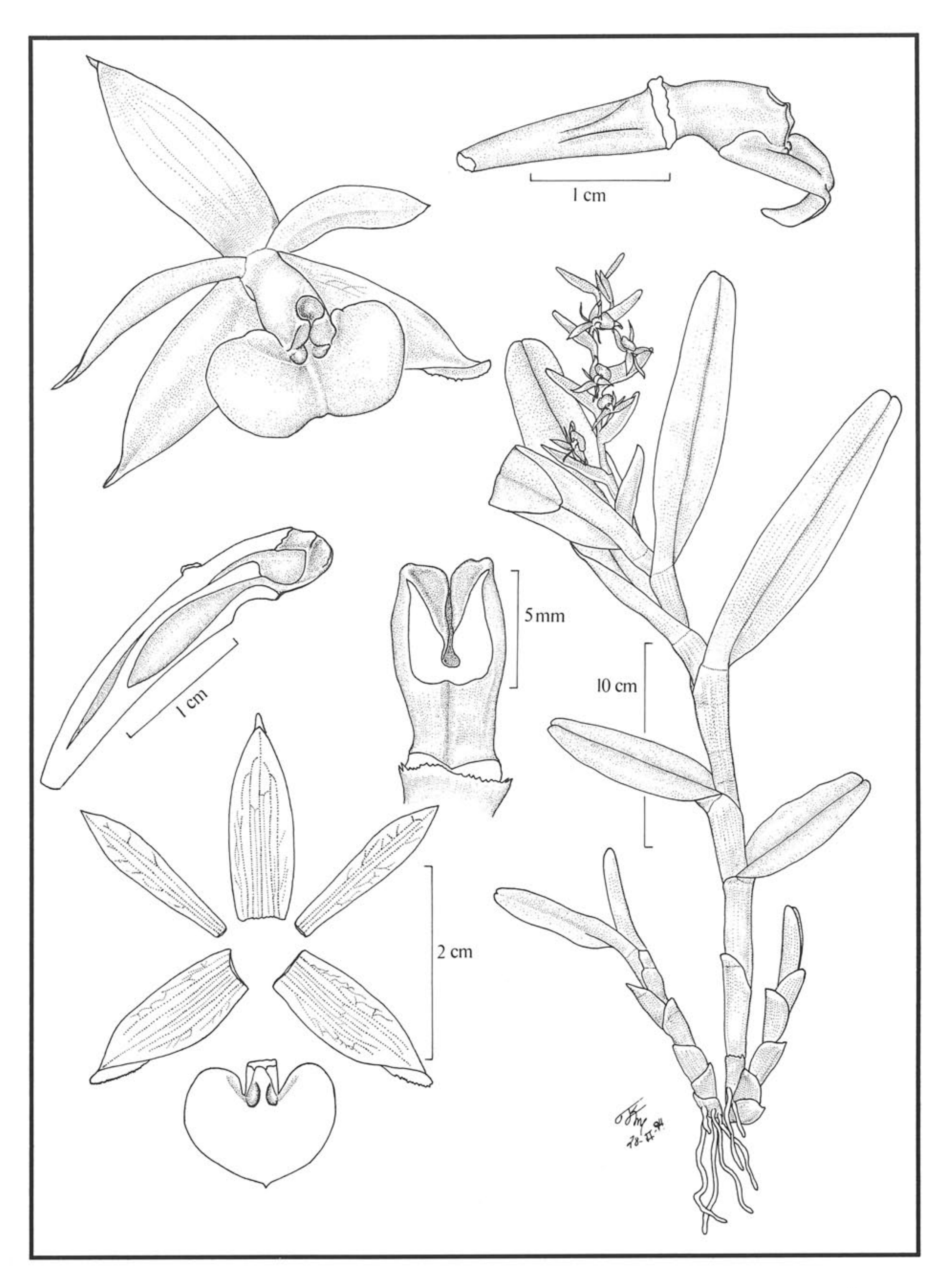
RECOGNITION: *Epidendrum bakrense*belongs to the *E. arbuscula* Lindl. group and can be recognized by its subcoriaceous leaves, successive flowers with a prominent ventral nectary which inflates the ovary over two-thirds its length, the reniform, bicallose lip, the narrowly obovate-spathulate petals and the arching column. *Epidendrum chimantense* Hágsater & Carnevali has purple-tinged leaf-sheaths, narrow, elliptic-lanceolate leaves, the column arching only at the base and a slender, non-inflated ovary. *Epidendrum lechleri* Rchb. f., a species native to Peru, has 13 mm long sepals and a 3-lobed lip. *Epidendrum nephroglossum*Schltr. has very prominent floral bracts equal to or longer than the ovary which is not swollen, acute petals and a reduced clinandrium.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the Bakra Mountains in south-central French Guyana, where the type was collected.

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Authors: E. Hágsater & G. Cremers **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM BELLOI Hágsater **Plate 313**

EPIDENDRUM BELLOI Hágsater, *sp. nov.*

Holotype: COSTA RICA: Alajuela: Reserva Biológica Monteverde, Río Peñas Blancas, Finca Volio, 10°20'N 84°41'W, 900 m, 11 Dec. 1989, ***E. Bello 1615*** INB! Isotype: MO! (illustration voucher).

Epidendro coriifolio Lindl. simile sed habitu caespitoso, bracteis patentibus non imbricatis rigidis acutis, flores superantibus, petalis 3-nervatis, labello cordiformi apiculato bicalloso.

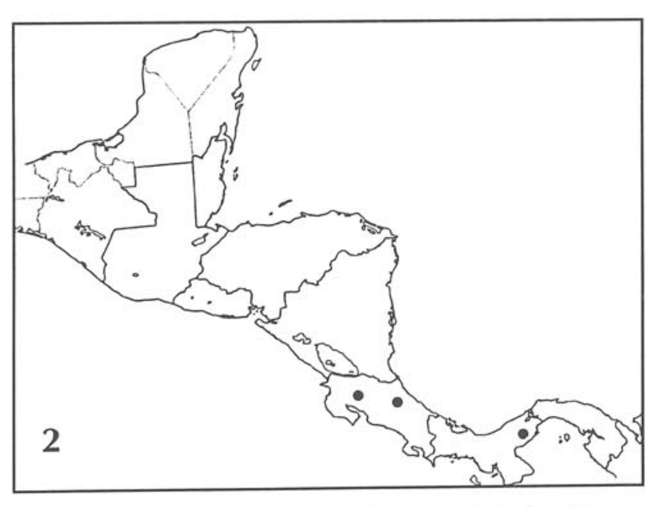
Hierba epífita, cespitosa,45-66 cm de alto. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos**sencillos, tipo caña, lateralmente comprimidos, erectos, ligeramente flexuosos, 29-46 x 0.5-1.8 cm. **Hojas** 6-7, dísticas, distribuidas a lo largo del tallo, subcoriáceas; vaina tubular, lateralmente comprimida, estriada en seco, ca. de 5 cm de largo; lámina oblonga, ápice desigualmente bilobado, con una pequeña arista en el seno, margen entero, verde, 8.5-24 x 2.7-3.8 cm. **Espata** ausente. **Inflorescencia**apical, racemosa, del tallo maduro, florece una sola vez, dística, erecta, recta, 15-20 cm de largo; pedúnculo ancipitoso, con una bráctea intermedia semejante a las florales; raquis delgado, no ornamentado. **Brácteas florales** más largas que el ovario y el perianto, largamente triangulares, agudas, conduplicadas, extendidas, separadas, dejando gran parte del raquis expuesto,27-40 x 4-11 mm. **Flores** 8, sucesivas, hasta 5 abiertas a la vez, no resupinadas, secundas, coloración "blanca", fragancia no registrada. **Ovario** inflado en su mitad apical, terete, no ornamentado, 15-18 mm de largo. **Sépalos** libres, glabros, coriáceos. **Sépalo dorsal** oblongo-elíptico, aristado, reflexo, márgenes extendidos, 5-nervado, con nervaduras secundarias intermedias, 22 x 6 mm. **Sépalos laterales**entre-abiertos, oblongo-elípticos, acuminados, márgenes extendidos, carina dorsal prominente y erosa, 5-nervados, con nervaduras secundarias intermedias, 21 x 6 mm. **Pétalos** extendidos, angostamente oblanceolados, agudos, margen extendido, entero, 3-nervados, los laterales ramificados, 20 x 4 mm. **Labelo** unido a la columna, entero, cordiforme, apiculado, margen entero, ápice revoluto, 13 x 15 mm; bicalloso, callos globosos, pequeños; carina obsoleta. **Columna** ligeramente arqueada, gruesa, con un par de puntas agudas a cada lado a la altura del ápice del clinándrio, 10 mm de largo. **Clinándrio** reducido, entero. **Antera** y **Polinios** no vistos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando 1/2 del ovario, inflado, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** simple, laterally compressed, erect. **Leaves** 6-7, distichous, oblong, apex unequally bilobed, subcoriaceous. **Inflorescence** apical, from mature growth, racemose, distichous, erect, straight, laterally compressed, ancipitous. **Floral bracts** longer than the flower, long and narrowly-triangular, acute, spreading, not imbricating. **Flowers** 8, successive, up to 5 open at once, "white". **Ovary** inflated towards the apical half. **Sepals** oblong-elliptic; **laterals** dorsally keeled, the keels erose, 5-veined. **Petals** narrowly oblanceolate, acute, 3-veined. **Lip** cordiform, apiculate; bicallose; with a reduced central keel. **Column** slightly arched. **Clinandrium** reduced. **Nectary** penetrating half the ovary lenght and somewhat inflated.

OTHER SPECIMENS: COSTA RICA: Alajuela: Reserva Biológica Monteverde, Río Peñas Blancas, Finca de Jesús Rojas, 10°18'N 84°44'W, *Bello 1543* INB! Ibid. 10°19'N 84°43'W, *Bello 1577* INB! Ibid. Cordillera Tilarán, Quebrada Azufre, 10°19'N 84°42'W, *Bello 2595* INB! Reserva Biológica Monteverde, Río Peñas Blancas, 10°18'N 84°44'W, *Haber 7990 et al.* CR! **Cartago:** Beside Río Gato, 9°47'N 83°41'W, *Lent 3713* AMES! SEL! Arriba de Taos, camino de Tapantí, *Dressler 314 et al.* US! **PANAMA: Coclé:** Hills above El Valle de Antón, *Gentry 3678 et al.* MO!

DISTRIBUTION AND ECOLOGY: Costa Rica to Panama, on the Atlantic slope of the Cordillera Central, at 700-900 m altitude, epiphytic. Flowering December-January.

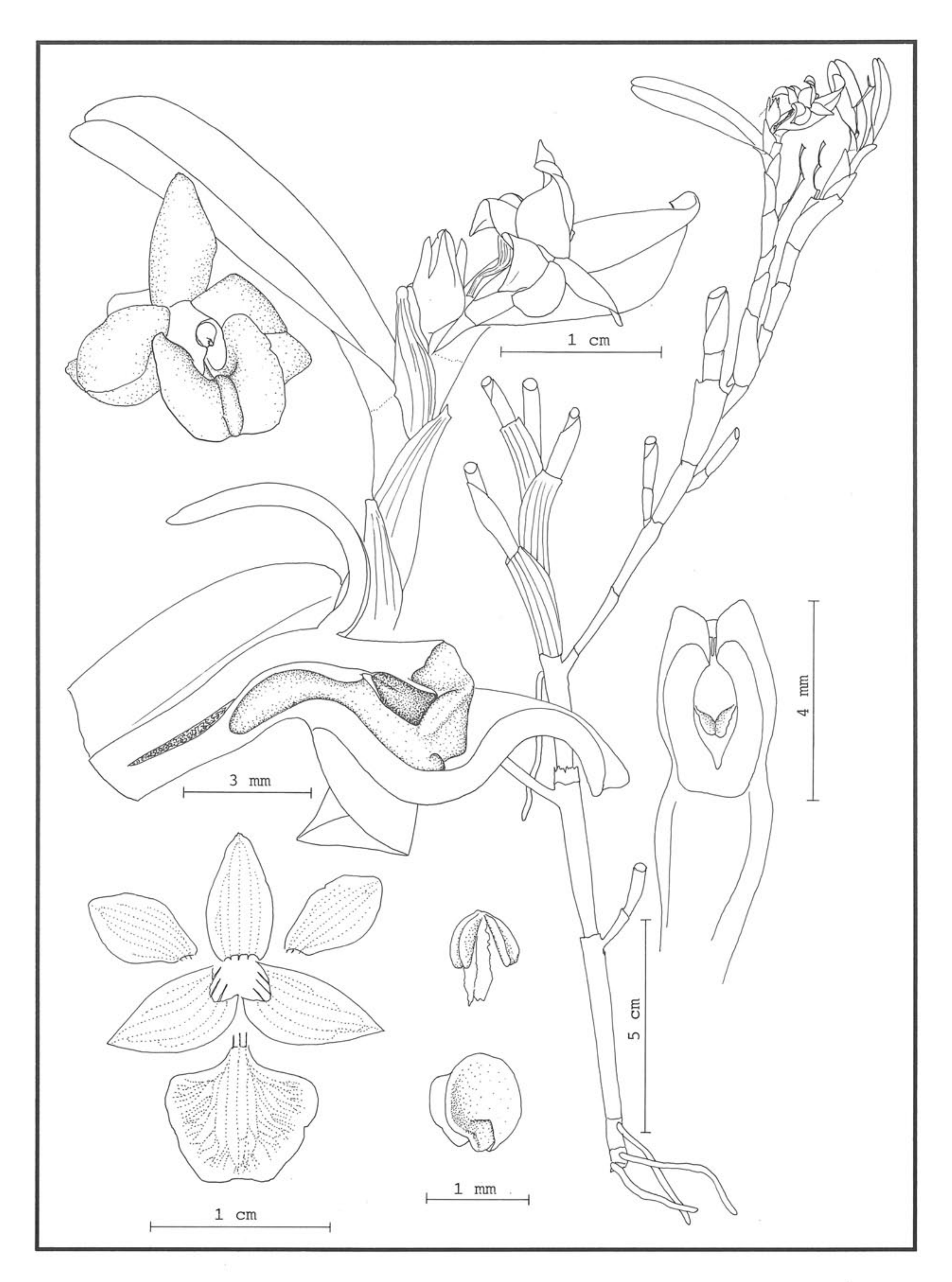
RECOGNITION: *Epidendrum belloi* belongs to the *E. coriifolium* group and can be recognized by its large plants, stems 29-46 cm long, with 6-7 leaves more than 2.5 cm wide, the inflorescence about as long as the apical leaves, the spreading, non-imbricating, acute bracts of the flowers surpassing the flowers which have 3-veined petals and a cordiform, apiculate, bicallose lip. It is closely related to *E. beharorum* Hágsater from Guatemala, which has a much longer inflorescence and an obreniform, ecallose lip. *Epidendrum palmense* Ames has a very compact inflorescence with imbricating bracts shorter than the flowers, and an obreniform, ecallose lip and 1-veined petals.



CONSERVATION STATUS: DD (data deficient). It is found in the Monteverde Biological Reserve and possibly in the Tapantí Reserve. The sole specimen from Panamá was "collected by native".

ETYMOLOGY: Dedicated to Erick Bello Carranza, collector of the type, a naturalist who has been involved in the Monteverde Natural Reserve for many years.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM BRACHYCLINIUM Hágsater & García-Cruz

Plate 314

EPIDENDRUM BRACHYCLINIUM Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Puntarenas: Cantón Central, Reserva Biológica de Monteverde, sendero nuboso, sitio 17, 1460 m, col. 25 Jan. 1988, ***E. Hágsater et al. 9425*** AMO!

Epidendro acrostigma Hágsater & García-Cruz simile sed petalis suborbicularibus, labello transverse ovato basi apiceque truncato, clinandrii margine quam columnae corpore breviore, differt.

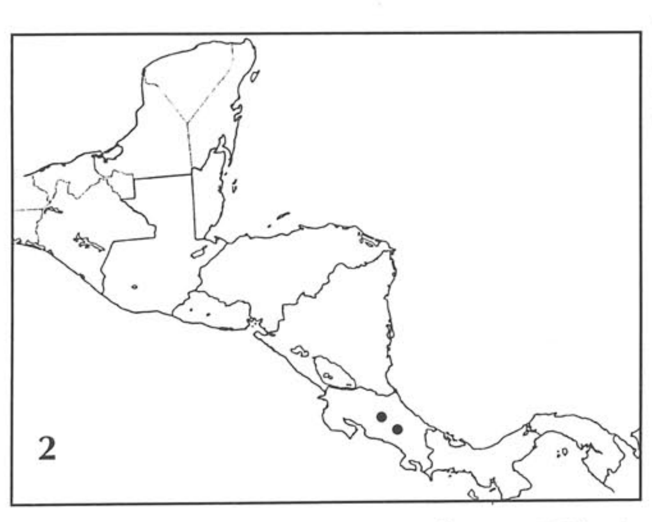
Hierba epífita, esencialmente monopodial, de 100 cm de alto o más. **Tallos** teretes, tipo caña, ramificados, el principal 0.4-0.5 cm de grosor, los secundarios 0.3-0.6 cm de grosor. **Hojas** distribuidas a lo largo del tallo principal cuando joven, pero cuando se ramifica se caen, las hojas de las ramas persistentes; vainas tubulares, escariosas, 1-3.5 cm de largo; lámina oblonga, ápice oblicuamente bilobado, redondeado, las de las ramas secundarias 1.5-3.5 x 0.5-1 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, florece una sola vez, racemosa, dística, erecta, 2-3 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.3-0.5 cm de largo; cubierto completamente por 1 bráctea, conduplicada, ovada, obtusa, 0.5-0.7 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, mucho más largas que el ovario, no imbricadas, anchamente ovadas, obtusas, 0.6-0.9 x 0.5-0.7 cm. **Flores** 2-3, simultáneas, resupinadas, verdes, en ocasiones ligeramente amoratadas. **Ovario** no ornamentado, cubierto completamente por las brácteas florales, recto, 5.5-7 mm de largo. **Sépalo dorsal** extendido, reflexo hacia el ápice, ovado a elíptico, obtuso, 5-nervado, 7-8 x 3-4 mm. **Sépalos laterales** extendidos, reflexos hacia el ápice, oblicuamente ovados, agudos, ligeramente carinados, 5-nervados, 8-9 x 3.5-4.5 mm. **Pétalos** extendidos, elípticos a subrómbicos, obtusos, 6-nervados, 7-8 x 3-4 mm. **Labelo** entero, transversalmente ovado, envolviendo completamete a la columna, base truncada, ápice truncado, margen ligeramente revoluto en posición natural, 7-8 x 8-9 mm; unicalloso, callo laminar, tridentado; unicarinado, carina a lo largo de la lámina del labelo. **Columna** recta, corta, tubular, 3.5-4.5 mm de largo. **Clinandrio** reducido, entero. **Antera** ovada, semicircular, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves, granulosas, más largas que los polinios; viscidio semilíquido. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** cubriendo un cuarto de la cavidad estigmática. **Nectario** penetrando cerca de la mitad de la longitud del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic monopodial **herb**. **Stems** branched, terete. **Leaves** oblong, apex obliquely bilobed, rounded. **Inflorescence** apical from the branches, racemose, distichous, erect. **Floral bract** conduplicate, longer than the ovary, widely ovate, obtuse. **Flowers** 2-3, simultaneous, resupinate, green, occasionally slightly tinged with purple. **Ovary** straight. **Dorsal sepal** reflexed near the apex, ovate to elliptic, obtuse, 5-veined. **Lateral sepals** reflexed near the apex, obliquely ovate, acute, slightly carinate, 5-veined. **Petals** elliptic to subrhombic, obtuse, 6-veined. **Lip** entire, transversely ovate, base truncatate, apex truncate; unicallose, callus laminar, tridentate; unicarinate, keel full length of lip. **Column** straight, short. **Clinandrium** reduced, entire.**Anther** ovate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** penetrating one half of the ovary.

OTHER RECORDS: COSTA RICA: Cartago: Cordillera de Talamanca entre Vare de Roble y La Sierra, *Horich sub Hágsater 6911* AMO! (flower in spirit; illustration voucher) MEXU! (xerox of illustration).

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica. Epiphyte in Monteverde Reserve and Cordillera de Talamanca, incloud forest and rain forest, 1460-2250 m altitude. Flowering in January.

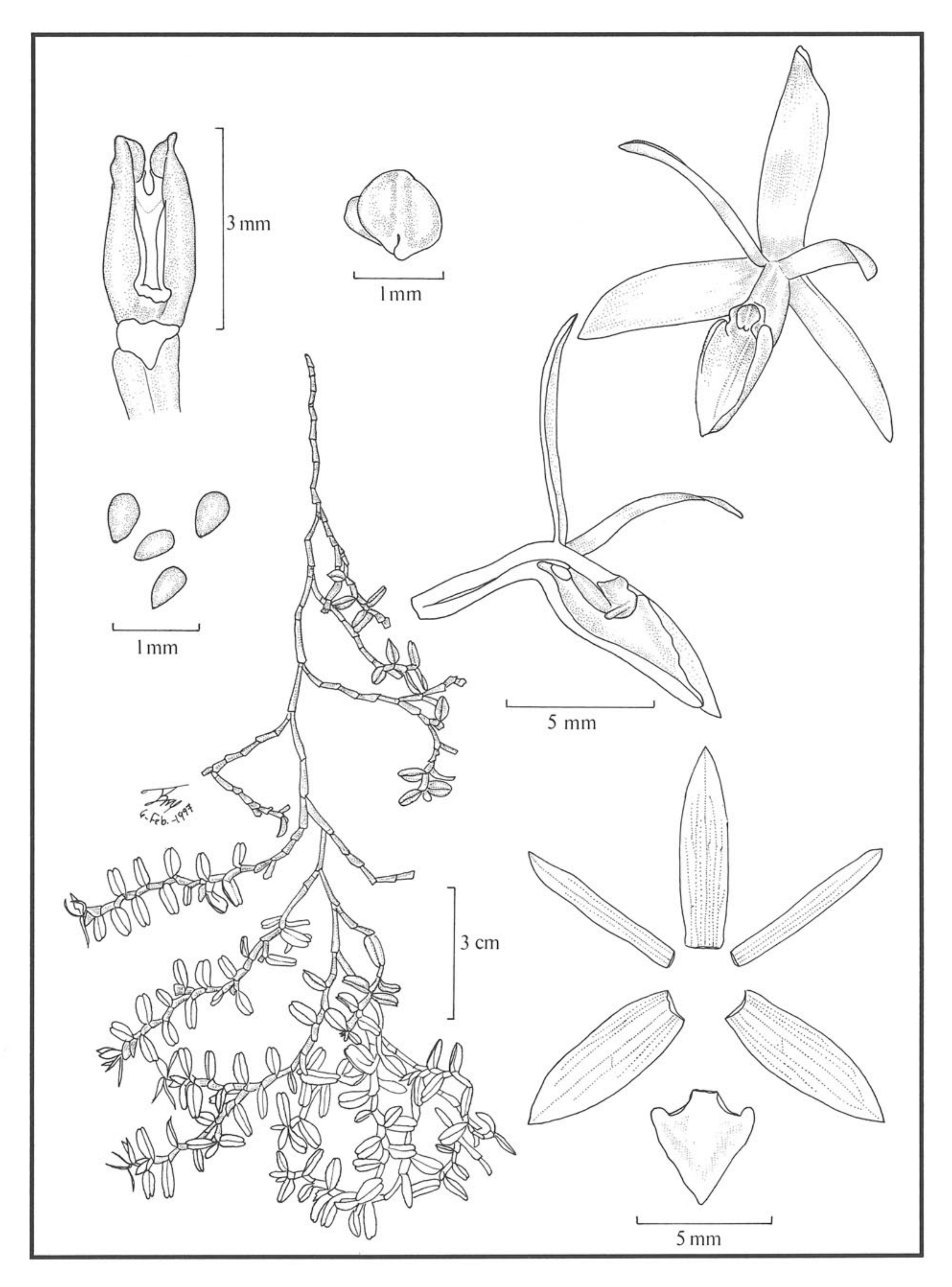
RECOGNITION: *E. brachyclinium* belongs to the *E. platystigma* Rchb. f. group and is recognized by its large plants with short, oblong leaves, secondary branches with leaves 1.5-3.5 x 0.5-1 cm, flowers green, sometimes slightly purple, ovary straight, sepals ovate to elliptic, 3-4.5 mm wide, petals subrhombic, lip entire, transversally ovate, base truncate, apex truncate, clinandrium reduced. *E. acrostigma* Hágsater & García-Cruz has secondary and tertiary branches with leaves 3-12 x 0.7-2 cm, floral bracts 1-1.9 cm long, flower whitish green, lateral sepals strongly carinate, lip subquadrate, clinandrium short. *E. campbellstigma* Hágsater & García-Cruz has secondary branches with leaves 3-6 x 0.8-1.5 cm, the floral bracts widely ovate, flowers apple green, the lip white, subreniform.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: This species seems to have the shortest clinandrium in the *E. platystigma* group species, and is named for that character.

Authors: E. Hágsater & J. García-Cruz **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM BRACHYREPENS Hágsater

Plate 315

EPIDENDRUM BRACHYREPENS Hágsater, *sp. nov.*

Holotype: COSTA RICA: San José; Desamparados, San Cristobal Sur, ca. 2 km al O, 1750 m, 26 Sep. 1996, ***J. García-Cruz 926, L. Sánchez & E. Lépiz***, INB! (illustration voucher). Isotypes: AMES! AMO! SEL!

Epidendro repens Cogn. similis sed foliis minoribus.

Hierba epífita, colgante, ramificada, de 30 cm de largo o más. **Raíces** basales, ocasionalmente de las ramificaciones en plantas adultas, sencillas, de 1 mm de grosor. **Tallos** muy ramificados, de un tallo principal que se identifica por las vainas consistentemente más largas que las de las ramas, de ca. 10 x 1.5-2.5 mm; las ramificaciones se producen por la sucesión de tallos cortos que se forman de cerca del ápice del tallo anterior y de los entrenudos; cada tallo secundario de 1-2.5 cm de largo, lateralmente comprimido. **Hojas** 5-6(8) distribuidas a todo lo largo de cada tallo; vainas lateralmente comprimidas, rugosas, las de las ramas secundarias 3-5 mm de largo; lámina articulada, ovada, ápice bilobado, coriácea, superficie rugosa, (4)6-12 x (2)4-5 mm. **Espata** ausente. **Inflorescencia** apical, florece una sola vez de cada tallo secundario, sésil, provista de 2-3 brácteas conduplicadas, imbricadas, 3 x 1.5 mm. **Flor** solitaria, no resupinada. **Ovario** arqueado en el ápice, terete, 5 mm de largo. **Sépalos** extendidos, angostamente elípticos, agudos, libres, sin quillas, 7(9)-nervados, 7.5-8 x 1.8-2.5 mm. **Pétalos** extendidos, lineares, agudos, libres, 3(5)-nervados, 6.7-7.5 x 0.8 mm de ancho. **Labelo** unido a la columna, entero, triangular-cordado, agudo, los lados abrazando la columna en posición natural, 3.8-5 x 3.9-4 mm; ecalloso. **Columna** recta, a un ángulo con respecto del ovario, gruesa, 3 mm de largo, el ápice redondeado y formando un par de engrosamientos interiores transversales frente al rostelo que dejan una apertura muy angosta y alargada a la entrada del nectario. **Clinandrio** reducido, entero. **Antera** ovoide, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos; caudículas cortas. **Rostelo** apical, hendido. **Cavidad estigmática** muy larga, ocupando prácticamente toda la columna; **lóbulos laterales del estigma** prominentes, en la base de la columna. **Nectario** reducido, apenas traspasando el perianto, no ornamentado. **Cápsula** ovoide con cuello apical, perianto persistente; fruto joven 9 x 3 mm.

Pendent, much branched epiphytic **herb**. **Roots** thin, at base of main stem, sometimes from branches in old plants. **Stems** teretes,the main stem with leaf sheaths about 10 mm long, branches very short, produced successively from the apex of the previous branch, thus giving the appearance of being much longer. **Leaves** articulate, with sheaths laterally compressed, rugose, blade ovate, apex bilobed, coriaceous, consistently short (leaves of the main stem not seen). **Inflorescence** apical from every secondary branch, sessile, 1-flowered, with 2-3 imbricating, conduplicate bracts. **Flowers** solitary, non-resupinate. **Sepals** spreading, narrowly elliptic, acute, 7-9-veined. **Petals** linear, acute, 3-5-veined. **Lip** entire, triangular-cordate, acute, ecallose. **Column** straight, at an angle with the ovary, thick, apex rounded, with a pair of ridges on the inner face which narrow the entrance to the nectary to a narrow slit. **Clinandrium** reduced, entire. **Anther** ovoid, with a low keel in front, 4-celled. **Pollinia** 4, obovoid. **Rostellum** apical, slit. **Stigmatic cavity** very long, occupying the entire length of the column; **lateral stigma lobes** prominent, at the base of the column. **Nectary** reduced, barely surpassing the perianth, unornamented. **Capsule** ovoid with an apical neck, perianth persistent.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Aserrí, Horich sub Hágsater 6972, AMO! Cordillera de Talamanca, *Davidse 24321* CR! MO! **NICARAGUA: Jinotega:** Top of Jinotega Grade, *Heller 6786* SEL 3446! SEL 3447! (pro parte); Peña Blanca, *Heller 9593* SEL 3447! (pro parte); Also description and illustration of *Heller 6786* mounted on SEL 3447! Macizos de Peñas Blancas, *Stevens 11481* MO? SEL! **PANAMA: Chiriquí:** Cerro Punta, *Allen 1530* AMES! MO! US!

DISTRIBUTION AND ECOLOGY: Found in central Nicaragua, Cordillera Central and Cordillera de Talamanca in Costa Rica and western Panama between 1200-2000 m altitude, epiphytic in humid forests. Flowering in March, fruiting in September.

RECOGNITION: *Epidendrum brachyrepens* is very close to and has been confused with *E. repens* Cogn. but is distinguished by its consistently shorter leaves, (4)6-12 mm long, whereas in the latter they are 10-25 mm long. We have not been able to detect any obvious differences in the flowers, but we have not seen fresh flowers of the new entity. It has also been confused with *E. confertum* Ames & C. Schweinf. which has non-articulate, acute leaves and long, simple stems, thus giving it an appearance of *Dichaea*.

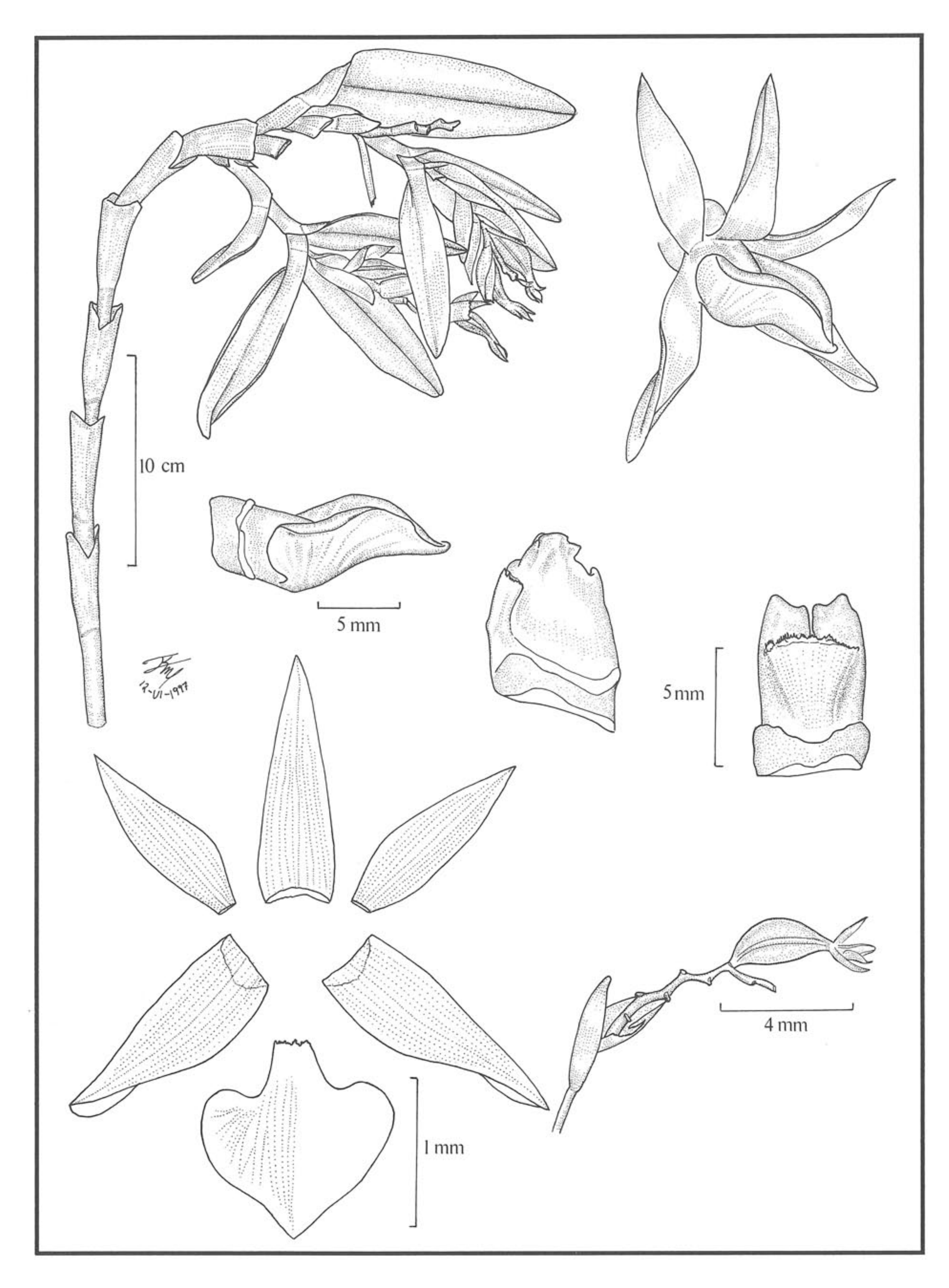
2

NOTES AND OTHER REFERENCES: The Heller specimens and illustrations were used by Hamer as the basis for IPT 8: 733. 1982, though he added the extended lip and oblique view of column and lip from *Stevens 11481* which is cited as Voucher specimen for the whole sheet. The Heller collection which is the basis for most of the illustration and the whole description is not cited by Hamer. Xerox of Heller illustration in Heller notes and illustration redrawn by Hamer before adding lip and oblique view both at AMO! Specimen *P. Standley 10016* cited by Hamer corresponds to *E. repens*, EAP, F!

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "βραχυς" short, and *"repens"* in reference to the similarity between the two species, and the shorter leaves of the new entity.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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ICONES ORCHIDACEARUM 3. 1999. Plate 315



EPIDENDRUM BRACTEOSTIGMA Hágsater & García-Cruz

Plate 316

EPIDENDRUM BRACTEOSTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: [San José]: Between La Palma and Yerba Buena, heavy cloud forest, 1500-1600 m, June 6, 1959, ***C. Kl. Horich s.n.*** MO!

Epidendro platystigma Rchb. f., simile sed bracteis floralibus pergrandis, sepalis anguste triangularibus vel lanceolatis valde carinatis et labello integro cordiformi acuto, recedit.

Hierba epífita, esencialmente monopodial, hasta 200 cm alto. **Raíces** no vistas. **Tallos** teretes, tipo caña, ramificados, el principal 0.8-1.5 cm de grosor, los secundarios 0.5-1 cm de grosor. **Hojas** a lo largo del tallo principal, cuando se ramifica se caén, las hojas de las ramas persistentes; vaina tubular, estriada, cartácea, 1.5-5 cm de largo; lámina elíptico-lanceolada, retusa, la del tallo principal 14 x 4 cm, la de las ramas 5-9 x 1.5-3 cm. **Inflorescencia** apical, únicamente de las ramificaciones, racemosa, dística, erecta, 6-9 cm de largo; pedúnculo corto, terete, recto 1-1.5 cm de largo; cubierto completamente por una bráctea conduplicada, ovada, obtusa, 3.2-3.6 cm de largo; raquis ligeramente sinuoso. **Brácteas florales** conduplicadas, más largas que el ovario, ovado-oblongas, agudas, 2.5-3.5 x 1.4-2.5 cm. **Flores** 4-6, simultáneas. **Ovario** no ornamentado, cubierto completamente por la bráctea floral. **Sépalos** extendidos, angostamente triangulares a lanceolados, agudos, fuertemente carinados, 9-nervados, 1.5-1.7 x 4.5-6 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, lanceolados, agudos, 9-nervados, 1.6-1.8 x 3-4 mm. **Labelo** unido a la columna, entero, envolviendo la columna en posición natural, cordiforme, agudo, 1-1.2 x 1.3 mm. **Columna** corta, 5 mm de largo. **Clinandrio** corto, entero. **Antera** subglobosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales. **Rostelo** hendido, subapical. **Cápsula** elipsoide, dorsalmente arqueada, sin pedicelo ni cuello, 3-4 cm de largo.

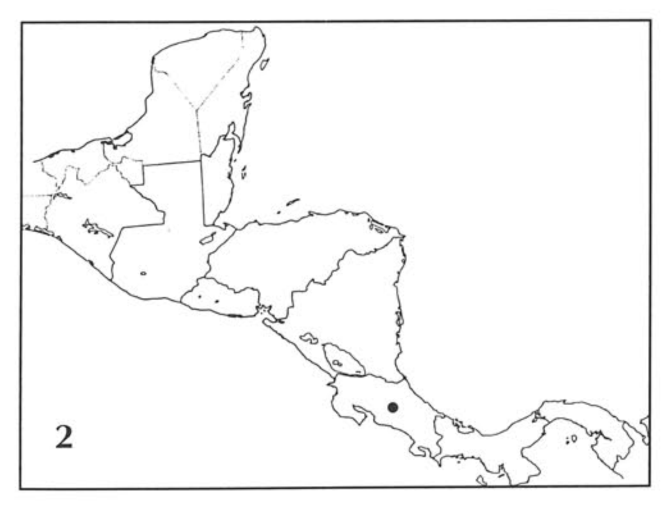
Epiphytic monopodial **herb. Stems** branched, terete. **Leaves** elliptic-lanceolate, retuse. **Inflorescence** apical from the branches, racemose, distichous. **Floral bract** conduplicate, longer than the ovary, ovate-oblong, acute. **Flowers** 4-6, simultaneous. **Ovary** unornamented. **Sepals** narrowly triangular to lanceolate, acute, strongly keeled, 9-veined; the **laterals** slightly oblique. **Petals** lanceolate, acute, 9-veined. **Lip** entire, cordiform, acute. **Column** straight, short. **Clinandrium** short, entire. **Anther** subglobose, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** subapical, slit. **Capsule** ellipsoid, dorsally arcuate.

DISTRIBUTION AND ECOLOGY: Known only from type locality. Epiphytic, monopodial herb, growing in cloud forest, from 1500 to 1600 m altitude. Flowering in June.

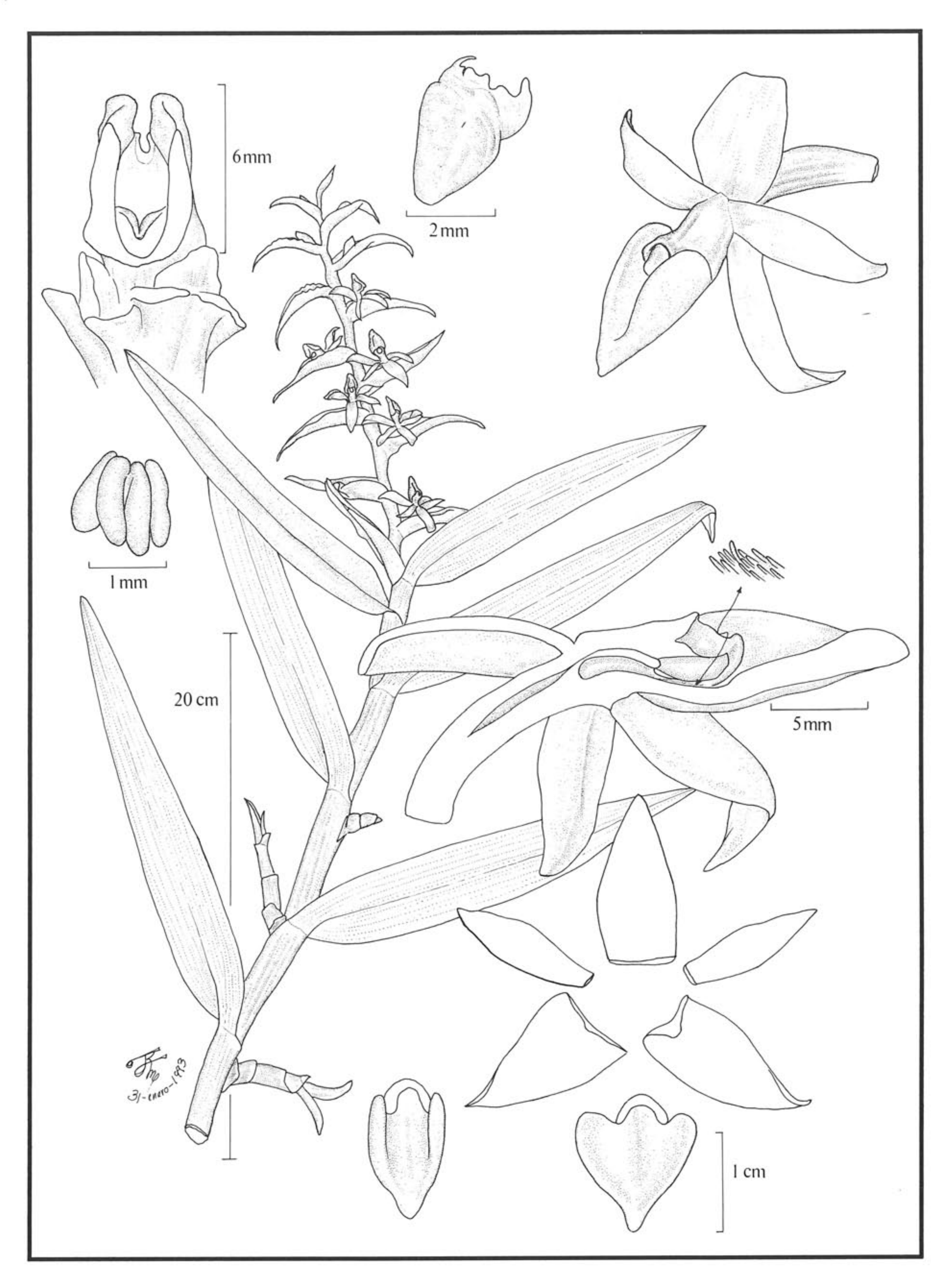
RECOGNITION: *Epidendrum bracteostigma* is closely to *Epidendrum platystigma* and can be recognized by the large plants with elliptic-lanceolate leaves, secondary and tertiary branches 5-9 x 1.5-3 cm. the floral bracts ovate-oblong, 2.5-3.5 cm long, sepals narrowly triangular to lanceolate, strongly keeled, lip entire, cordiform, acute. The latter has narrow leaves, floral bracts shorter, sepals and petals ovate-elliptic, lip subtriangular.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The epithet is applied in reference to the big floral bracts characteristic of this species, because *E. bracteostigma* has the largest floral bracts in the *E. platystigma* group of species.



Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM BRACTIACUMINATUM Hágsater & Dodson

Plate 317

EPIDENDRUM BRACTIACUMINATUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Napo: km 27 Baeza to Tena, 2150 m, 30 June 1985, ***C. H. Dodson 15913 & A. Hirtz*** RPSC! (illustration voucher). Isotype: SEL!

Epidendro macrostachyo Lindl. simile sed bracteis floralibus longe acuminatis, quam flores multo longioribus margine undulato et petalis subrhombico-ellipticis differt.

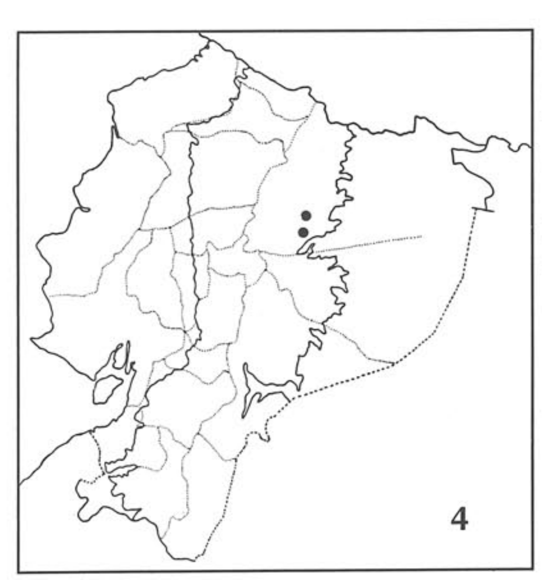
Hierba terrestre, cespitosa, ca. 150 cm de alto. **Raíces** carnosas, de la base del tallo principal. **Tallos** ramificados cuando maduros, tipo caña, erectos, ca. 60 x 1.1 cm, las ramas ca. 22 x 0.8 cm. **Hojas** distribuidas a lo largo de todo el tallo, las inferiores con lámina caediza, en las ramas generalmente 5-6 hojas; vaina finamente rugosa y estriada, ca. 5 cm de largo; lámina angostamente lanceolada, aguda, margen finamente eroso hacia el ápice; las hojas del tallo principal 15-18 x 2-2.8 mm, las de las ramas 13-15 x 1.5-2 cm, la primera y última más cortas que las intermedias. **Espata** ausente. **Inflorescencia** apical, en el tallo principal o en las ramas maduras, florece una sola vez, racemosa, erecta, ligeramente flexuosa, 13-20 cm de largo. **Brácteas florales** del doble de largo que la flor incluido el ovario, progresivamente más cortas, perpendiculares al raquis, naviformes, ovadas, algo carinadas hacia el ápice, largamente acuminadas, cartáceas, margen ondulado, entero, 15-45 x 7-18 mm (sin extender). **Flores** 11-12, no resupinadas, casi simultáneas, la mayoría abiertas con los últimos botones en desarrollo, color rojo borgoña a morado, base de la columna y antera verde. **Ovario** no inflado, terete, no ornamentado, 9-12 mm de largo. **Sépalo dorsal** reflexo, triangular-ovado, agudo, carnoso, glabro, 7-nervado, 13-17 x 4-8 mm. **Sépalos laterales** extendidos, triangular-ovados, agudos, oblicuos, carnosos, glabros, 7-nervados, 12-17 x 5-9 mm. **Pétalos** recurvados, subrómbico-elípticos, agudos, carnosos, 3-nervados, 10-15 x 2.5-4 mm. **Labelo** unido a la columna, en posición natural los lados abrazando el ápice de la columna, entero, cordiforme, abruptamente estrecho cerca del ápice, muy carnoso, 9-12 x 9-12 mm; ecalloso; sin quillas. **Columna** recta, gruesa, 5-9 mm de largo, el ápice con un diente a cada lado, grueso y algo curvado hacia arriba. **Clinandrio** reducido, entero. **Antera** subovoide, obtusa, carnosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** muy angostos, de 1/3 del largo de la cavidad estigmática. **Nectario** apenas penetrando hasta el perianto, cortamente piloso frente al estígma, los pelos dirigidos hacia el interior. **Cápsula** no vista.

Caespitose, terrestrial. **Stems** erect, branching above with age. **Leaves** narrowly lanceolate, acute, apical margin finely erose. **Inflorescence** apical, erect, racemose. **Floral bracts** twice as long as the flower including the ovary, progressively shorter, ovate-long-acuminate, margin undulate, entire. **Flowers** 11-12, non-resupinate, nearly simultaneous, most are open with the last buds still closed, burgundy red to mauve, base of column and anther green. **Sepals** triangular-ovate, acute, fleshy; **dorsal** reflexed; **laterals** spreading. **Petals** reflexed, subrhombic-elliptic, acute. **Lip** united to the column, the sides embracing the apex of the column, entire, cordiform; ecallose. **Column** straight, thick, with an apical upturned tooth on each side. **Clinandrium** reduced, entire. **Nectary** not penetrating beyond the perianth, shortly pilose opposite the stigma, the hairs sloping inwards.

OTHER SPECIMENS: ECUADOR: Napo: Guacamayo, km 132 Quito to Tena, *Dodson 14036, Benzing & Hirtz* MO! SEL! Cordillera de Guacamayo, *Dodson 14847, Gentry, Palacios & Zaruma* NY! RPSC! Cosanga-Tena, *Luther 997, Besse & Halton* SEL! Baeza Tena km 23, *Öllgaard, Roth & Sperling 35835* AAU! Tena-Baeza km 50, *Thurston 3077 sub Hágsater 7469* AMO! Between Cosanga and Sarayacu, *Todzia 2526 & Grimes* F! MO!

OTHER RECORDS: ECUADOR: Cosanga, *Hágsater 8842 & Dodson* AMO! (flower in spirit); Cordillera Guacamayo, *Hirtz 1774* RPSC! (slide at AMO!).

DISTRIBUTION AND ECOLOGY: Known only from the province of Napo, Cordillera del Guacamayo, beyond Cosanga at around 1900-2150 m altitude. Flowering from March to December.



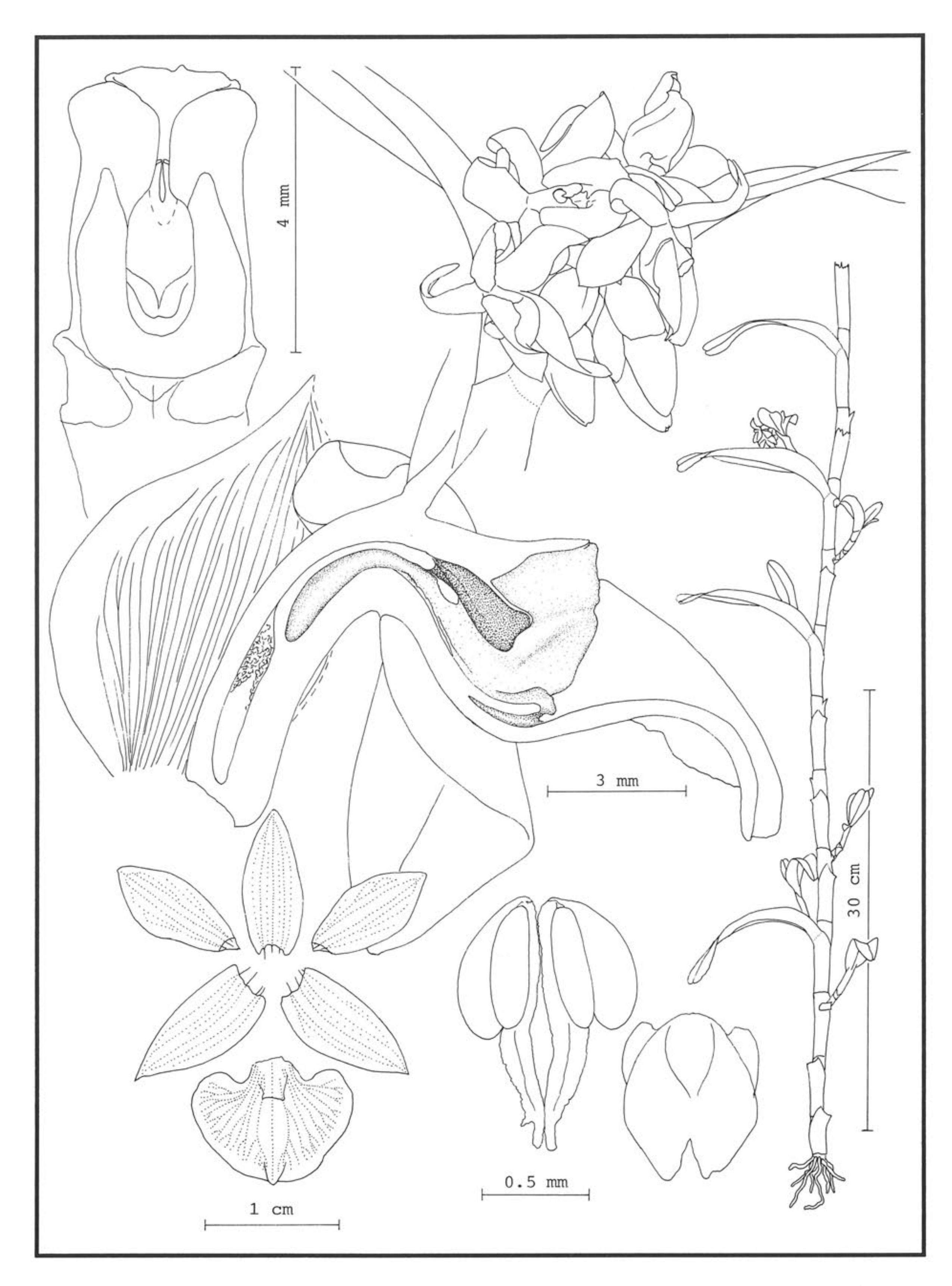
RECOGNITION: *Epidendrum bractiacuminatum* is closely related to *E. macrostachyum*, and is distinguished by its very long, acuminate bracts, about twice as long as the flowers, their margins undulate. All other species in this group have much smaller bracts, at most as long as the flower, and never long acuminate. *Epidendrum palaciosii* Hágsater & Dodson has flowers about one-third the size, the sepals muriculate outside, not keeled. *Epidendrum dermatanthum* Kraenzl. has petals nearly as wide as the sepals. *Epidendrum coordinatum* Rchb. f. has carinate, acute sepals, but the apex of the column has dolabriform wings. *Epidendrum macrostachyum* has filiform petals. *Epidendrum oxycalyx* Hágsater & Dodson has acuminate sepals and petals.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the very long-acuminate, undulate floral bracts that distinguish this species from the rest of the *E. macrostachyum* group.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**

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EPIDENDRUM CAMPBELLSTIGMA Hágsater & García-Cruz

Plate 318

EPIDENDRUM CAMPBELLSTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Puntarenas: Monteverde, Finca Campbell, 1450 m, col. 13 Mar. 1983, pressed 1 Sep. 1989, ***E. Hágsater et al. 7073*** AMO! Isotype: CR!

Epidendro penneystigma Hágsater & García-Cruz simile sed bracteis floralibus late ovatis plerumque brunneis in siccitate, floribus viridibus, labello albo, sepalis ovatis, labello integro subreniformi, clinandrio brevi, recedit.

Hierba epífita, esencialmente monopodial, de 100 cm de alto o más. **Raíces** basales, carnosas, 1.5-3 mm de grosor. **Tallos** teretes, tipo caña, ramificados, el principal 0.4-1.5 cm de grosor, los secundarios 0.3-0.6 cm de grosor. **Hojas** distribuídas a lo largo del tallo, las del tallo principal más grandes y deciduas, las de las ramas más cortas y persistentes; vaina tubular, rugosa, estriada, papirácea, 1-4.5 cm de largo; lámina angostamente oblonga, ápice oblicuamente bilobado, redondeado, las del tallo principal 7-12 x 1-3 cm, las de las ramas secundarias 3-6 x 0.8-1.5 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, florece una sola vez, racemosa, dística, erecta a arqueada, 3-4 cm de largo; pedúnculo corto, lateralmente comprimido, recto, 0.7-1.5 cm de largo; cubierto parcialmente por 1 bráctea, conduplicada, oblongo-ovada, obtusa, 1-1.6 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, mucho más largas que el ovario, no imbricadas, anchamente ovadas, agudas, pardas al secar, 0.8-1.6 x 0.8-1.4 cm. **Flores** 4-6, simultáneas, resupinadas, verde manzana, el labelo blanco. **Ovario** no ornamentado, cubierto completamente por las brácteas florales, arqueado, 6-9 mm de largo. **Sépalos** extendidos, ovados, agudos, mucronados, 7-nervados, 9-11 x 4-5.5 mm. **Pétalos** extendidos, elípticos, agudos, 5-nervados, 9-10.5 x 4-5 mm. **Labelo** unido a la columna, entero, subreniforme, envolviendo completamete a la columna, base cordada, margen ligeramente revoluto en posición natural, 8-9.5 x 11-12.5 mm; unicalloso, callo laminar; unicarinado, carina a lo largo de la lámina del labelo. **Columna** recta, corta, tubular, ensanchada hacia el ápice, 3-3.5 mm de largo. **Clinandrio** corto, entero. **Antera** ovada, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves, granulosas, más largas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido; **lóbulos laterales del estigma** cubriendo 1/3 de la cavidad estigmática. **Nectario** penetrando cerca de 1/2 de la longitud del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic monopodial **herb**. **Stems** branched, terete. **Leaves** narrowly oblong, apices obliquely bilobed, rounded, those of the main stem longer and deciduous, those of the branches smaller and persistent. **Inflorescence** apical, from the branches, racemose, distichous, erect to arcuate. **Floral bracts** conduplicate, longer than the ovary, widely ovate, acute. **Flowers** 4-6 simultaneous, resupinate, apple green, lip white. **Ovary** arcuate. **Sepals** ovate, acute, mucronate, 7-veined. **Petals** elliptic, acute, 5-veined. **Lip** entire, subreniform, base cordate; unicallose, callus laminar; keel 1 full length of lip. **Column** straight, short. **Clinandrium** short, entire. **Anther** ovate, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose, longer than the pollinia; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** penetrating one half of the ovary.

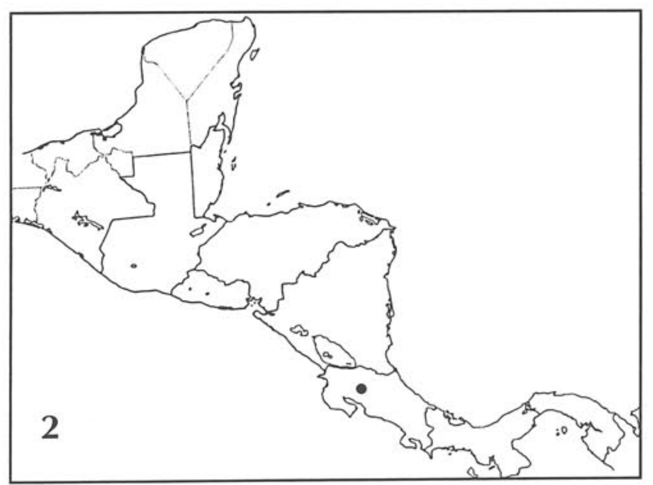
OTHER SPECIMENS: COSTA RICA: Puntarenas: Monteverde, Finca Campbell, *Hágsater et al. 7072* AMO! (illustration voucher).

DISTRIBUTION AND ECOLOGY: Known only from the type locality. Epiphyte in Monteverde Reserve, in rain forest, at 1450 m altitude. Flowering from August to September.

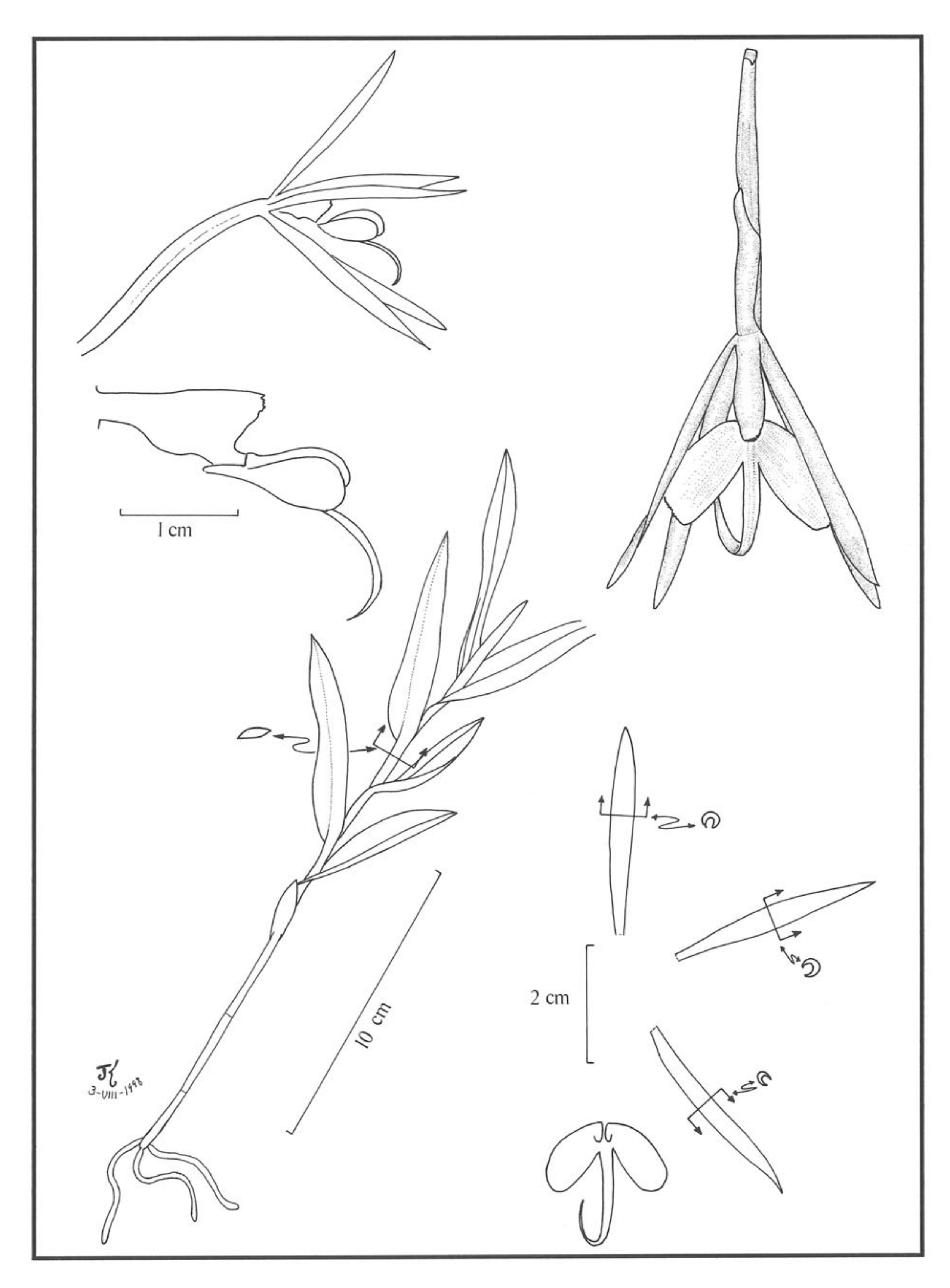
RECOGNITION: *E. campbellstigma* belongs to the *E. platystigma* Rchb. f. group and is recognized by its large plants with narrowly oblong leaves, secondary branches with leaves 3-6 x 0.8-1.5 cm, the floral bracts widely ovate, generally brownish when dried, 0.8-1.6 cm long, flowers apple green, the lip white, ovary arcuate, sepals ovate, acute, lip subreniform, base cordate, clinandrium as long as the column, entire. *E. penneystigma* has secondary and tertiary branches with leaves 1.5-5 x 0.7-1.5 cm, floral bracts not imbricate, flowers white, sepals elliptic-lanceolate, lip semicircular-flabellate. *E. jefestigma* Hágsater & García-Cruz, has flowers whitish green, lip white suborbicular, base truncate, callus bilobate.

CONSERVATION STATUS: DD (data deficient). Known only from a protected nature reserve.

ETYMOLOGY: Named after John Campbell, member of the community in Monteverde, who has supported studies in ecology and conservation.



Authors: E. Hágsater & J. García-Cruz **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM CAMPYLOGLOSSUM P. Ortiz & Hágsater

Plate 319

EPIDENDRUM CAMPYLOGLOSSUM P. Ortiz et Hágsater, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca; Buenaventura, Bajo Calima, Plantación de caucho, ca. 50 m, 1996, ***E. Rozo & H. Calderón 53*** TOLI! (illustration voucher).

Epidendro nocturno Jacq. simile sed lobulis lateralibus labelli obovatis, rotundatis sive truncatis, lobulo medio acicular aciculari conspicue recurvo in statu naturali.

Hierba epífita, cespitosa, ca. 30 cm de alto. **Tallos** erectos, ancipitosos, dilatados hacia el ápice, rectos, morado. **Hojas** 7, distribuidas en la mitad apical del tallo; vaina tubular, ancipitosa; lámina elíptica, aguda, verde en el haz, morada en el envés, 10-11.5 x 2-2.3 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, florece durante varios años. **Brácteas florales** mucho más cortas que el ovario. **Flores** una a la vez, sucesivas, sépalos y pétalos amarillo-crema, labelo blanco, callos blancos, columna blanca, fragancia no registrada. **Ovario** terete, no inflado, 5 cm de largo. **Sépalos** entreabiertos, angostamente elípticos, acuminados, margen entero, revolutos, 35 x 4 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, angostamente elípticos, acuminados, estrechos cerca de la base, margen entero, revolutos, 34 x 4 mm. **Labelo** unido a la columna, trilobado, 33-36 x 9-14 mm; bicalloso, los callos lateralmente aplanados; lóbulos laterales obovados, oblicuos, redondeados a truncados, 17 x 6 mm; lóbulo medio acicular, claramente recurvado en posición natural, 24 x 1.5 mm. **Columna** recta, fuertemente dilatada en los dos tercios apicales, con una giba ventral, 14 mm de largo. **Clinandrio** corto, margen aserrado.

Caespitose epiphytic **herb. Stems** erect, ancipitose, dilated towards the apex, straight. **Leaves** 7, distributed towards the apical half of the stem; sheath tubular, ancipitose; blade elliptic, acute, green above, purple below. **Inflorescence** apical, pluriracemose, flowering during several years. **Flowers** one at a time, successive, sepals and petals creamy-yellow, lip, callus and column white. **Ovary** terete, not inflated. **Sepals** narrowly elliptic, acuminate. **Petals** narrowly elliptic, acuminate, narrowed near the base. **Lip** 3-lobed; lateral lobes obovate, oblique, rounded to truncate; midlobe acicular, recurved in natural position. **Column** straight, strongly dilated above the basal third. **Clinandrium** short, margin serrate.

OTHER RECORDS: COLOMBIA: Valle del Cauca: Bajo Calima, *Rozo & Calderón 53* AMO! (slide of live flower), HPUJ! Without data, **Orquídeas Nativas de Colombia 5: 770,** pl. 904. 1994.

RECOGNITION: *Epidendrum campyloglossum,* a member of the *E. nocturnum* group, is recognized by the obovate, rounded to truncate lateral lobes of the lip, the acicular, recurved midlobe, the 5 cm long, terete ovary, and the 10-11.5 x 2-2.3 cm long, acute leaves. It is closely related to *E. buenaventurae* Kraenzl., which has the lateral lobes of the lip elongate, semiovate, acute, and narrower leaves, 7-15 x 1-1.2 cm. *Epidendrum rocalderianum* P. Ortiz & Hágsater, also found along the Pacific coast of Colombia, has very reduced, short, round, lateral lobes of the lip and a prominently inflated nectary on the underside of the apical half of the ovary.

DISTRIBUTION AND ECOLOGY: Known only from the Pacific coastal plain of Colombia near Buenaventura, at around 50 m altitude. Flowering in March, probably throughout the year.

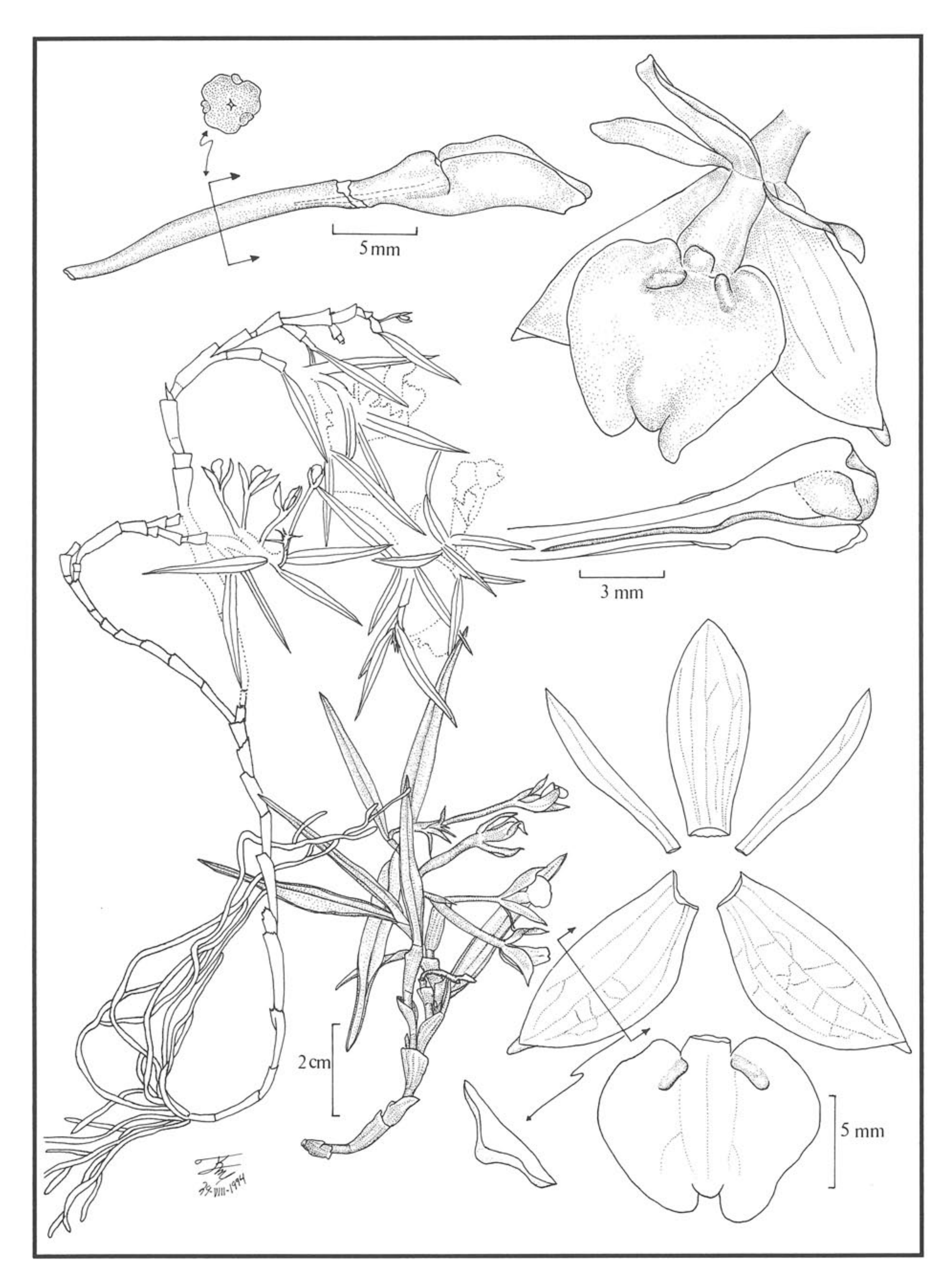
CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*kampylos*", curved, in reference to the recurved midlobe which distinguishes this species from others of the *E. nocturnum* group.



NOTE: The illustration is based on a sketch by Pedro Ortiz Valdivieso and the slide of live flower.

Authors: P. Ortiz & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM CARDENASII Hágsater

Plate 320

EPIDENDRUM CARDENASII Hágsater, *sp. nov.*

Holotype: BOLIVIA: Cochabamba; Ayopaya, Sailapata, 3500 m, parasitic [epiphytic] in wet log at forest, flowers yellow, Nov. 1935, ***M. Cárdenas 3301*** AMES! Isotype: AMO! (illustration voucher).

Epidendro soratae Rchb. f. affine sed floribus majoribus, labello bilobato, callis divaricatis.

Hierba epífita, ca. 30 cm de alto. **Raíces** carnosas, solo de la base del tallo basal, 1.5-2.5 mm de grosor. **Tallos** tipo caña, aparentemente teretes, más o menos rectos, cortos de 3-6 entrenudos, superpuestos (superficialmente parecen largos y ramificados), el nuevo se produce de un entrenudo subapical del anterior, 3-5.5 x 0.2-0.5 cm; ocasionamente de un tallo se producen dos nuevos tallos cerca del ápice, dando a la planta un aspecto ramificado. **Hojas** 3-5, distribuidas a todo lo largo de los tallos; vaina tubular, estriada, rugosa, infundibuliforme, 0.9-1.2 cm de largo; lámina angostamente lanceolada, aristada, margen apical escasamente papiloso, subcoriácea, lisa, 3.6-5.1 x 0.5-0.7 cm. **Espata** ausente. **Inflorescencia** apical, de las ramas maduras, antes de que inicie un nuevo crecimiento, florece una sola vez, arqueado nutante, racemosa, las flores agregadas; pedúnculo terete, delgado hacia la base, sin brácteas, ca. 1 cm de largo; raquis no ornamentado, terete. **Brácteas florales** mucho más cortas que el ovario, lanceoladas, acuminadas, 3-6 mm de largo. **Flores** 3-5, simultáneas, resupinadas, de color "amarillo". **Ovario**, no inflado, 16-17 mm de largo. **Sépalo dorsal** elíptico, agudo, margen extendido, glabro, sin quilla, 5-nervado, 12 x 5 mm. **Sépalos laterales** libres, elípticos, apiculados, ligeramente oblicuos, con quilla dorsal, margen extendido, 4-nervados, 13 x 6 mm. **Pétalos** angostamente lanceolados, agudos, margen entero, 1-nervados, 10-12 x 1.5 mm. **Labelo** unido a la columna, reniforme, bilobado, cordado en la base, emarginado con un mucrón grueso y romo en el seno, lóbulos semiovados, 9-10 x 11.3-12.5 mm; bicalloso los callos laminares y divaricados; con una carina central baja y ancha. **Columna** recta, dilatada hacia el ápice, 5 mm de largo. **Clinandrio** corto, carnoso, entero. **Antera** y **Polinios** no vistos. **Rostelo** apical, hendido. **Nectario** penetrando 1/5 del ovario, angosto, sin formar vesícula. **Cápsula** no vista.

Epiphyte. **Stems** apparently terete, they appear long and branching, but in reality they are a succession of short stems, of 3-6 internodes, the new stem produced from a subapical internode, sometimes branching. **Leaves** 3-5; sheath striated, rugose, infundibuliform; blade narrowly lanceolate, aristate, apical margin papillose. **Inflorescence** apical, produced from the mature stem before it has initiated growth of a new module, racemose, flowering only once, nutant, flowers aggregate. **Floral bracts** lanceolate, acuminate, much shorter than the ovary. **Flowers** 3-5, simultaneous, resupinate. **Ovary** not swollen. **Dorsal sepal** elliptic, acute, 5-veined. **Lateral sepals** elliptic, apiculate, keeled, 4-veined. **Petals** narrowly lanceolate, acute, 1-veined. **Lip** reniform, bilobed, base cordate, emarginate with a thick mucro in the sinus, lobes semiovate; bicallose, the callus laminar and divaricate. **Column** straight, dilated towards the apex. **Clinandrium** short, fleshy, entire. **Nectary** penetrating about 1/5 of the ovary, narrow.

OTHER SPECIMENS: BOLIVIA: Ayopaya, Sailapata, *Cárdenas 3290* AMES! (x2)

DISTRIBUTION AND ECOLOGY: Apparently limited to the upper sides of the Eastern Cordillera of the Andes in Bolivia, epiphytic in wet bogs, 3500 m. Flowering registered from October to November.

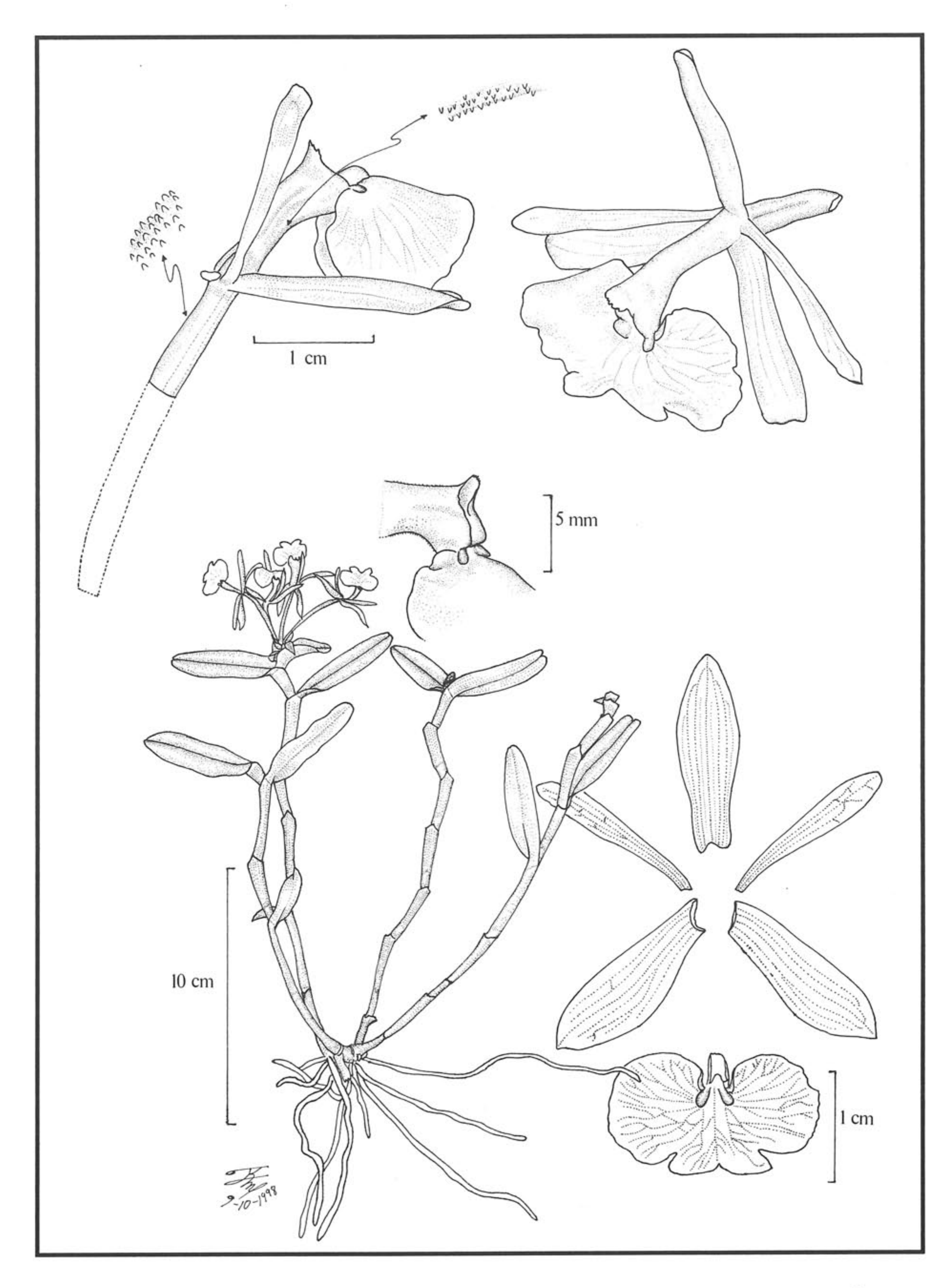
RECOGNITION: *Epidendrum cardenasii* belongs to the *E. soratae* group characterized by the branching habit with superposed stems, infundibuliform, rugose leaf-sheaths, lanceolate, aristate leaves, compact, racemose, nutant inflorescence on a filiform peduncle and can be recognized by the racemose inflorescence, the bilobed lip with a thick mucro in the sinus, two laminar, divaricate calli, sepals 12-13 mm long. *Epidendrum soratae* has a somewhat three-lobed lip, the apical lobe protruding from the lateral lobes, small, emarginate, without any thick mucro in the sinus, sepals 6-7 mm long.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Martín Cárdenas, collector of Bolivian plants, especially from Cochabamba.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM CARNEVALII Hágsater & L. Sánchez

Plate 321

EPIDENDRUM CARNEVALII Hágsater et L. Sánchez, *sp. nov.*

Holotype: VENEZUELA: Aragua: Tiara, 1200-1300 m, ***G. Carnevali 3202*** VEN. Isotype: MO.

Epidendro chlorocorymbos Schltr. simile sed caulibus aliquantum lateraliter compressis, labelli lobulo medio brevi latoque, lobuli medii lobulis elongatis et divergentibus, callis elongatis et divergentibus, clinandrio prominenti eroso-fimbriato, ovario columnaque papillosa.

Hierba epífita, cespitosa, 14-25 cm de alto. **Raíces** basales, carnosas, 0.6-1 mm de grosor. **Tallo** sencillo, tipo caña, algo lateralmente comprimido, flexuoso, 9.5-20 x 0.2-0.35 cm. **Hojas** 4-12, equidistantes a lo largo del tallo; vaina terete, lisa, 1.5-2 cm de largo; lámina subcoriácea, angostamente elíptica, ápice bilobado, aristado, margen entero, lisa, verde, 4-7.5 x 0.9-1.5 cm. **Espata** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 4-7 x 2-3 mm. **Flores** (3)5-10, simultáneas, resupinadas, blanco-verdosas. **Ovario** no inflado, terete, papiloso, 25-40 x 8-11 mm. **Sépalos** subcoriáceos, glabros, libres. **Sépalo dorsal** elíptico, agudo, margen entero, extendido, 5-nervado, 13-18.5 x 3.2-4.8 mm. **Sépalos laterales** oblicuamente elípticos, agudos, margen entero, extendido, 5-nervados, 13.5-18 x 2-6 mm. **Pétalos** extendidos, membranáceos, oblanceolados, agudos, margen entero, extendido, 3-nervados, 10.5-16 x 0.8-2 mm. **Labelo** unido a la columna, trilobado, 9-11.5 x 12-18.5 mm; bicalloso, los callos agudos, alargados y divergentes, proyectados como dos cuernos, en ocasiones subglobosos; base del labelo con 1 a 3 venas engrosadas; lóbulos laterales semiorbiculares a elípticos, margen entero a ligeramente ondulado, 4.5-6 x 7.5-9.5 mm; lóbulo medio corto, ancho, seno emarginado a ancho, formando dos lóbulos anchos, divergentes, 1.8-2.1 x 4.5-8.8 mm. **Columna** ligeramente arqueada, delgada, papilosa, 9.5-11 x 1-1.5 mm. **Clinandrio** prominente, eroso-fimbriado. **Antera** subglobosa, 4-locular. **Polinios** 4, subiguales, semiovados, lateralmente comprimidos; caudículas suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** subapical, rajado. **Lóbulos laterales del estigma** pequeños. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** simple, reed-like, somewhat laterally compressed, flexuous. **Leaves** 4-12, narrowlly elliptic, bilobed apex. **Inflorescence** apical, flowering only once, sessile. **Flowers** (3)5-10, resupinate, simultaneous, white-greenish. **Ovary** papillose. **Sepals** subcoriaceous, glabrous, free, elliptic, acute, 5-veined, the **laterals** oblique. **Petals** spreading, oblanceolate, acute, margin entire, membranaceous. **Lip** united to the column, 3-lobed; bicallose, callus prominent, acute, diverget; lateral lobes semiorbicular to elliptic, margin entire to undulate; midlobe emarginate, forming two wide, diverget lobes. **Column** slightly arcuate, papillose. **Clinandrium** prominent, erose-fimbriate. **Anther** subglobose, 4-celled.**Nectary** penetrating 1/2 the ovary.

OTHER SPECIMENS: VENEZUELA: *Couret sub Hágsater 5558* AMES! AMO! BR! CAY! COL! CR! F! G! HB! K! MO! NY! MEXU! P! PMA! QCNE! SEL! UPRRP! USM! VEN! Idem. *Couret sub Hágsater 5559* AMO! IJ! S! SJ! U! US! **Distrito Federal:** Ávila, *Renz & Renz 8681* RENZ (slide), AMO! El Zunquito -Tovar, *Renz & Renz 9540* RENZ (slide), AMO! El Zunquito-Carayaca, *Renz & Renz 9828* RENZ (slide), AMO! Cerro Ávila, *Padre Vogl 4* F! **Falcón:** Curimagua, *Steyermark 99072* AMES! Puente de Jobo, *Steyermark 99276* AMES (x2)! **Merida:** Río Chama, *Steyermark 56230* AMES! F! **Miranda:** Costado del Guayabo, *Hermano Gines 4471* US! Los Teques, *Pittier 11570* US! (illustration voucher), Afluentes del río Guarita, *Steyermark & Berry 112090* MO!

OTHER RECORDS: VENEZUELA: Aragua: Tiara, *Carnevali 3202* AMO! (spirit). **Falcón:** San Luis, *Carnevali 327* AMO! (spirit).

DISTRIBUTION AND ECOLOGY: Endemic to Venezuela, in the central and western section of the Coastal Range (Cordillera de la Costa), the eastermost section of the Cordillera de Mérida, and the Sierra de San Luis, at 800 to 1800 m altitude. Epiphyte, growing in rain or cloud forest, secondary forest and disturbed forest. Flowering from May to September.



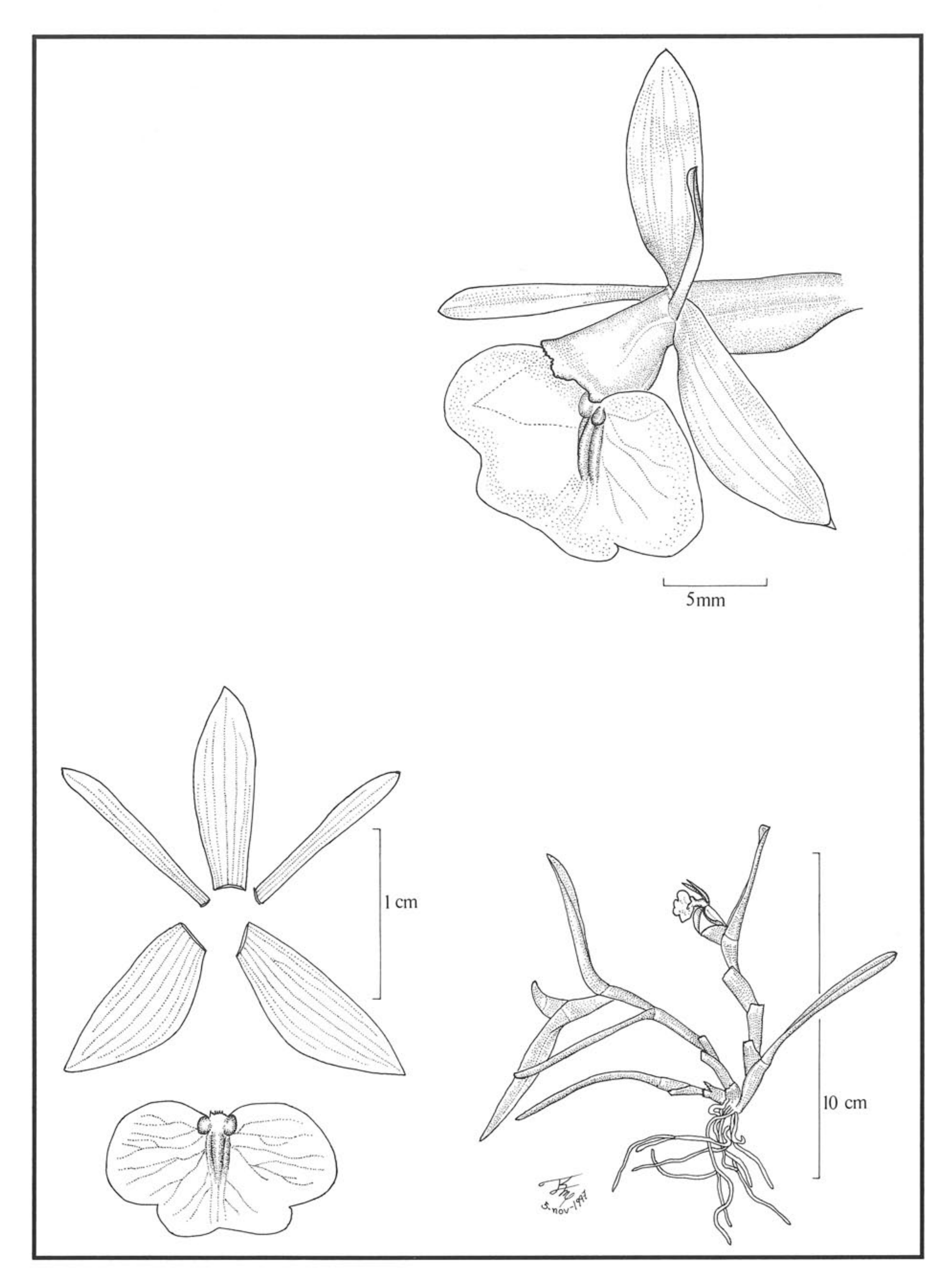
RECOGNITION: *Epidendrum carnevalii* belongs to the *E. difforme* Jacq. group, and can be recognized by its somewhat laterally compressed stems, narrowlly elliptic leaves, short, wide, prominent, diverget callus, emarginate midlobe, with acute, divaricate lobes, erose-fimbriate clinandrium and specially the papillose ovary and column. It is similar to *E. chlorocorymbos*, from the Atlantic Slopes from Mexico to Panama which has terete stems, subglobose callus, semiorbicular lobes of the midlobe, short clinandrium and glabrous ovary and column. It is also similar to other Caribbean species *E. floridense* Hágsater, *E. boricuarum* Hágsater & L. Sánchez, *E. garcía-esquivelii* Hágsater & L. Sánchez but they have subglobose callus, entire, reniform lips and unornamented ovary and column.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: This species honors Dr. German Carnevali, orchid specialist from Venezuela, who collected material of this species, presently he is working at CICY Mérida, Yucatán in México.

REFERENCES: Dunterville G.C.K. & L. A. Garay. 1961. **Venezuelan Orchids Illustrated.** Vol. 2, 114-115. Andre Deustch. U.S.A.; Dunterville G.C.K. & L. A. Garay. 1979. **Orchids of Venezuela**. An illustrated field guide. 582. Botanical Museum of Harvard University. U.S.A.; Foldats, E. 1970. **Flora de Venezuela**. Vol. 15. parte. 3. 231. Instituto Botánico. Dirección de Recursos Natuerales Renovables. Ministerio de agricultura y cría, Caracas, Venezuela.

Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM CHANCHAMAYODIFFORME Hágsater & L. Sánchez

Plate 322

EPIDENDRUM CHANCHAMAYODIFFORME Hágsater et L. Sánchez, *sp. nov.*

Holotype: PERU: Junín: Chanchamayo Valley, 1500 m, Nov. 1929, ***C. Schunke 1085*** F! (illustration voucher).

Epidendro scharfii Hágsater & Dodson simile sed caulibus ancipitibus, foliis lineari-lanceolatis, ovario vesicam ferenti, labello trilobato.

Hierba epífita, cespitosa, 6-8 cm de alto. **Raíces** basales, carnosas, filiformes, 1 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, ligeramente flexuosos. **Hojas** 5-6, equidistantes a lo largo del tallo, ascendentes; vaina ancipitosa; lámina linear-lanceolada, obtusa, 4-6 x 0.5-0.7 cm. **Espata** ausente. **Inflorescencia** apical, uniflora, del tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 2 mm de largo. **Flores** 1, resupinada, verde. **Ovario** formando una vesícula detrás del perianto, terete, 11 mm de largo. **Sépalos** extendidos, glabros, libres, lanceolados, agudos, margen revoluto, 7-nervados, 10-10.5 x 1.5-2 mm; los **laterales** algo oblicuos. **Pétalos** libres, linear-lanceolados, agudos, membranáceos, 3-nervados, 10-10.5 x 1-1.3 mm. **Labelo** unido a la columna, base cordada, trilobado, margen entero, 8-12 x 7-8 mm; bicalloso, los callos subglobosos; lóbulos laterales semicirculares; lóbulo medio transversalmente rectangular, emarginado. **Columna** arqueada, gruesa, dilatada desde la base, 10-11 mm de largo. **Clinandrio** prominente, dentado. **Antera** suborbicular, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose, epiphyte. **Stems** simple, reed-like, ancipitose, slightly flexuous. **Leaves** 5-6, blade ascending, linear to lanceolate, obtuse. **Spathe** absent. **Inflorescence** apical, one-flowered, sessile. **Floral bracts** much shorter than the ovary, triangular, acute. **Flower** 1, resupinate, green. **Ovary** terete, with a vesicle. **Sepals** glabrous, free, lanceolate, acute, margin revolute, 7-veined; the **laterals** oblique. **Petals** free, linear-lanceolate, acute, membranaceous, 3-veined. **Lip** adnate to the column, cordate at the base, 3-lobed, margin entire; bicallose, callus semicircular; lateral lobes semicircular; midlobe transversaly rectangular, emarginate. **Column** arcuate, thick, dilated from the base. **Clinandrium** prominent, dentate. **Nectary** penetrating 1/2 of the ovary, unornamented.

OTHER SPECIMENS: PERU:Junín: Chanchamayo Valley, *Schunke 1239* F! Idem. *Schunke 1245* F!

DISTRIBUTION AND ECOLOGY: Known only from the Chanchamayo Valley in Peru. Epiphyte, from 1200 to 1500 m altitude. Flowering from November to February.

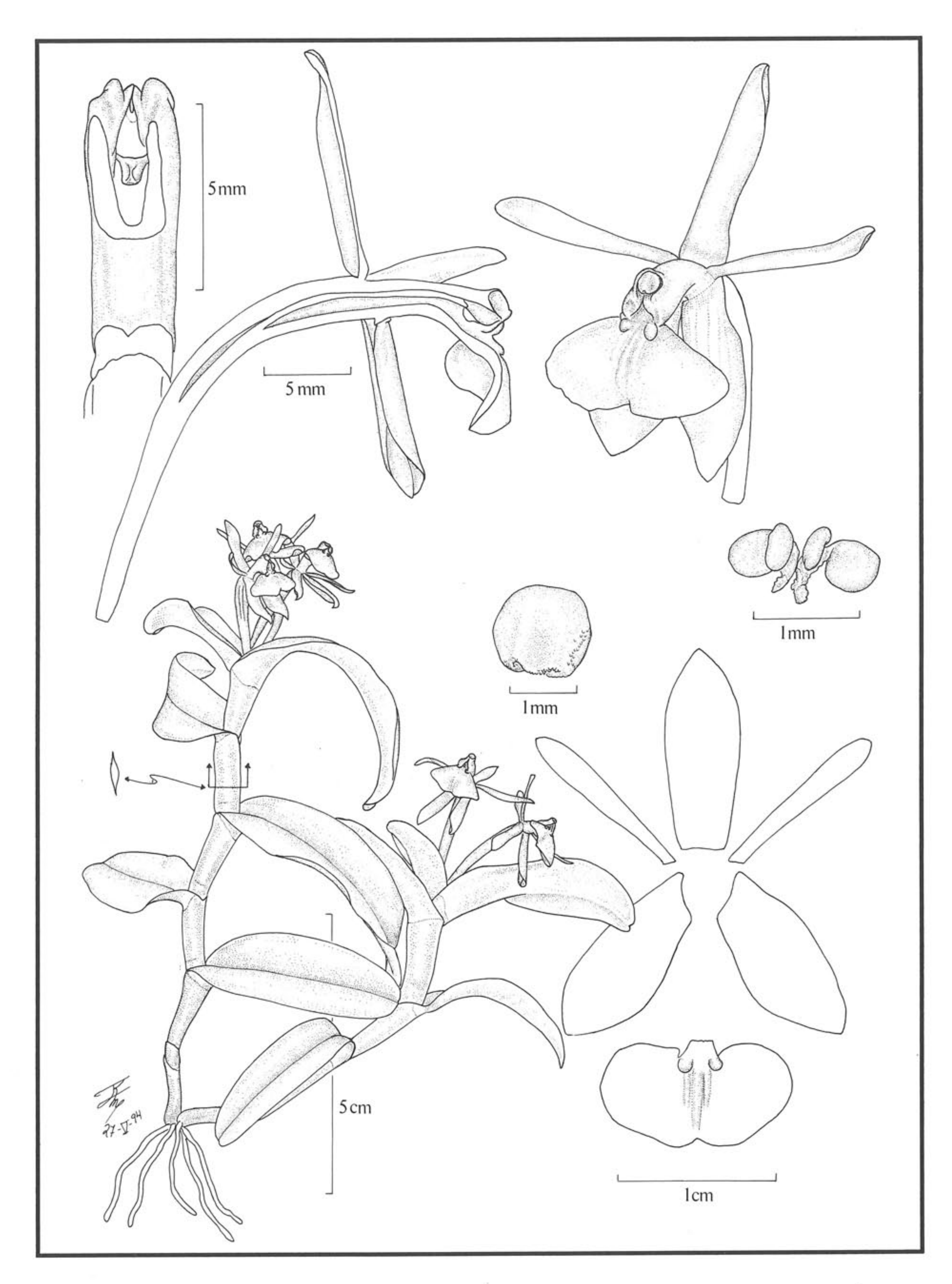
RECOGNITION: This species can be recognized by the short plants, linear to lanceolate ascending leaves, single flower, ovary with a vesicle, lip 3-lobed, dentate clinandrium. It is similar to *Epidendrum scharfii* which has 18 cm tall plants, ovate-elliptic leaves, 3-4 flowers, entire, reniform lip.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the Chanchamayo valley of Junín, in Peru, where the species was originally found and "*difforme*" for the group to which the species belongs.



Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM CHAUVETII Hágsater & L. Sánchez

Plate 323

EPIDENDRUM CHAUVETII Hágsater et L. Sánchez, *sp. nov.*

Holotype: FRENCH GUIANA: Remontant le fleuve Sinnamary, en haut du Petit Saut, Barrage hydroélectique EDF, col. 1 Oct. 1993, pressed 2 Oct. 1995, ***G. Chauvet 01B.09C sub E. Hágsater 11573*** CAY! Clonotypes: 27 May 1994 AMO! 12 Sep. 1997 P! (illustration voucher, in spirit).

Epidendro garcia-esquivelii Hágsater & L. Sánchez simile sed caule ancipiti, foliis late ellipticis, floribus 2-3 viridibus, petalis 1-nervatis, labelli disco tribus carinis demissis ferenti, labelli apice emarginato, columna longiore prominentiis apicalibus destituta, clinandrio brevi non conico.

Hierba epífita, cespitosa, 9-11 cm de alto. **Raíces** basales, carnosas, filiformes, 0.8-1 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, flexuosos, 7-9 x 0.4-0.5 cm. **Hojas** 5-6, equidistantes a lo largo del tallo; vaina ancipitosas 1-1.5 cm de largo; lámina elípticas obtusa, carina dorsal baja, coriácea, 3-6 x 1-1.7 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario, ovada, redondeada, 2 x 1 mm. **Flores** 2-3, simultáneas, resupinadas, verdes, sin fragancia aparente. **Ovario** dilatado justo detrás del perianto, terete, 19-24 x 1.8-2.2 mm. **Sépalos** extendidos, glabros, libres, coriáceos, elípticos a obovados, obtusos, margen entero, revoluto, con una quilla apical baja, 5-nervados, 12-12.5 x 3.7-4.5 mm; **los laterales** oblicuos. **Pétalos** entreabiertos, linear-oblanceolados, redondeados, margen entero, revoluto, 1-nervados, 10-11 x 1.3-1.5 mm. **Labelo** unido a la columna, bilobado, oscuramente reniforme, emarginado, margen entero, 6-6.3 x 11-11.5 mm; bicalloso, los callos pequeños, subglobosos; tricarinado, las carinas bajas, la central se prolonga casi hasta el ápice del labelo. **Columna** ligeramente arqueada, delgada, 8.7-9 x 1.8-2 mm. **Clinandrio** corto, entero. **Antera** subesférica, finamente papilosa, 4-locular. **Polinios** 4, subiguales, semiovoides, lateralmente comprimidos; caudículas semejantes en longitud a los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cerca de 1/2 del largo de la cavidad estigmática. **Nectario** penetrando 1/4 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose, epiphyte. **Stems** simple, reed-like, ancipitous, flexuous. **Leaves** 5-6, elliptic, obtuse. **Inflorescence** apical, flowers only once, sessile. **Flowers** 2-3, simultaneous, resupinate, green. **Ovary** dilated, terete. **Sepals** spreading, glabrous, free, coriaceous, elliptic to obovate, obtuse, margin entire, revolute, 5-nerved. **Petals** partially spreading, linear-oblanceolate, rounded, margin entire, revolute, 1-nerved. **Lip** united to the column, bilobed, obscurely reniform, emarginate, margin entire; bicallose; with three low keels. **Column** slightly arcuate. **Clinandrium** short, entire. **Anther** subspherical, finely papillose, 4-celled. **Pollina** 4, subequal, semiovate, laterally compressed; caudicles soft and granulose; viscidium viscous, translucent. **Rostellum** apical, slit. **Lateral stigma lobes** about 1/2 of the length of the stigmatic cavity. **Nectary** penetrating 1/4 of the ovary, unornamented.

OTHER SPECIMENS: FRENCH GUIANA: Without locality, *Richard s.n.* W17157! St. Laurent du Maroni, Station Cambrouni, *Service Forestier* 4446 CAY! P! Remontant le fleuve Sinnamary, en haut du Petit Saut, Barrage hydroélectique EDF, *Chauvet 01B.09C, sub Hágsater 11575* AMO! Cayennes, *Mr. Leprieur* 346 G! Approuge, rives en amont de Crike Tortue, *Oldeman 2312* CAY! P!

DISTRIBUTION AND ECOLOGY: Known only from French Guiana. Epiphyte in rain forest, 250 m altitude. Flowering from May to September.

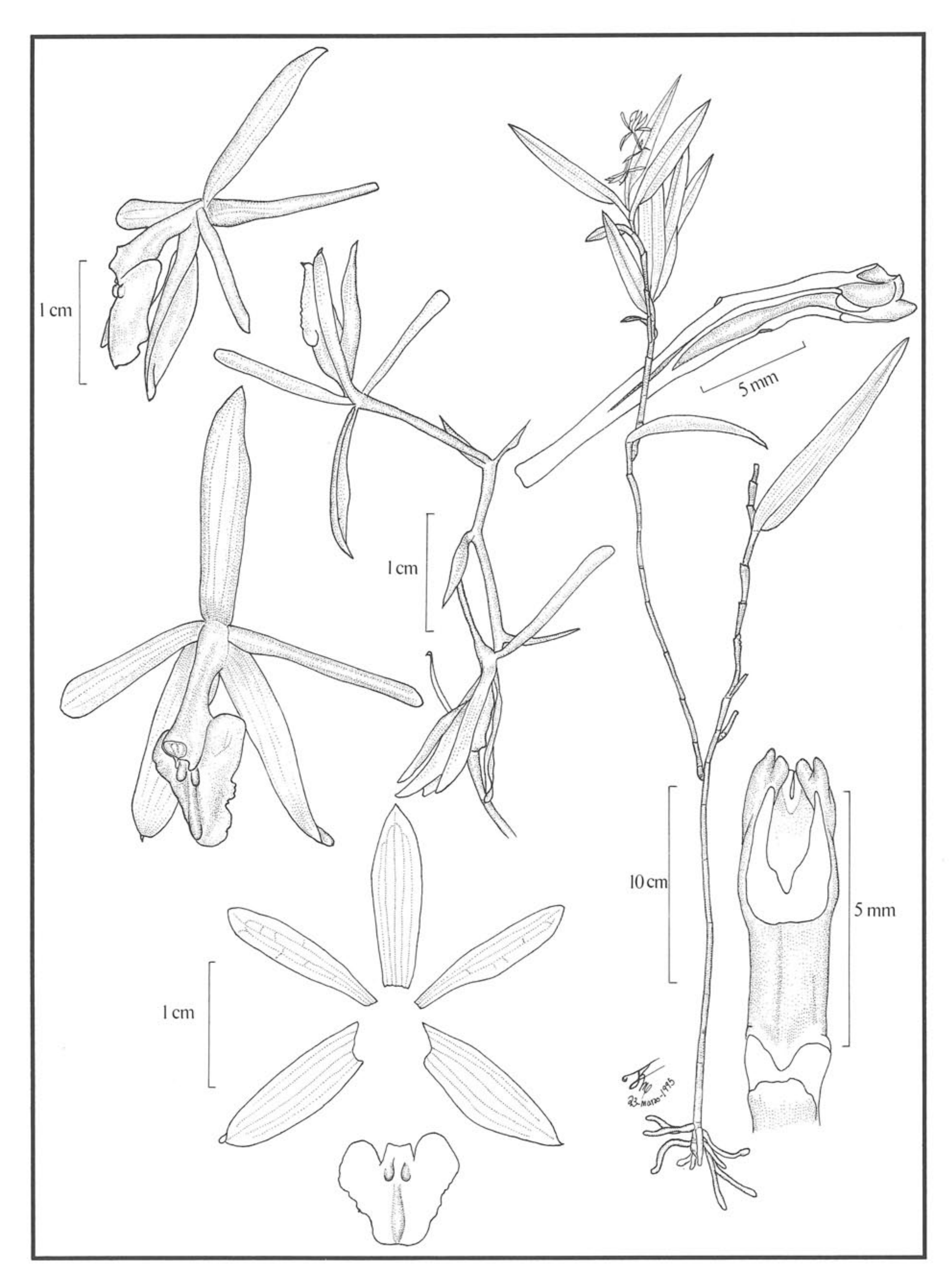
RECOGNITION: *Epidendrum chauvetii* can be recognized by the ancipitose stems, widely elliptic leaves, 2-3 green flowers with 1-nerved petals, reniform lip with emarginate apex, and 3 keels in the disc, column slightly arcute. It is similar to *E. garcia-esquivelii* from western Venezuela, which has laterally compressed stems, narrow leaves, 4 greenish white flowers, 3-nerved petals, entire lip, one keel in the disc and column with apical prominences. It differs from *E. Amapense* Hágsater & L. Sánchez, from French Guiana and Northern Brazil, which has larger plants, laterally compressed stems, 1-2 flowers, petals 3-nerved and a 3-lobed lip.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: This species is dedicated to Gérard Chauvet, who collected the material from which the type specimen was prepared.

Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM CHIMALAPENSE Hágsater & Salazar — **Plate 324**

EPIDENDRUM CHIMALAPENSE Hágsater et Salazar, *sp. nov.*

Holotype: MÉXICO: Oaxaca: San Miguel Chimalapa; Cerro Baúl, filo S un poco al S de la cima, bosque mesófilo con *Cupressus, Oreopanax*, 1930-1970 m, ***T. Wendt, S. Maya & M. Ishiki 4951*** AMO! (illustration voucher). Isotype: CHAPA!

Epidendro skutchii Ames, F. T. Hubb. & C. Schweinf. simile sed foliis latioribus et brevioribus, labello sine carinis radiantibus prominentibus.

Hierba epífita, formando arbustos de ca. 60 cm de alto. **Raíces** sencillas, carnosas, blancas, 3-4 mm de grosor. **Tallos** erectos, los subsecuentes producidos de los entrenudos de la mitad superior del tallo anterior, los tallos inferiores más largos, haciéndose cada vez más cortos y delgados al alejarse de la base, 15-26 x 0.2-0.4 cm. **Hojas** 2-4, agrupadas cerca del ápice; vainas tubulares, teretes, papiráceas, caducas en la base; lámina angostamente elíptico-lanceolada, aguda, gramínea, 8-12 x 1-1.8 cm. **Espata** ausente. **Inflorescencia** apical, racemosa, del tallo maduro; pedúnculo corto, filiforme, 2.5 cm de largo; raquis flexuoso. **Brácteas florales** más cortas que el largo del ovario, lanceoladas, agudas, 5-7 mm de largo. **Flores** 3-4, simultáneas, resupinadas, verdosas, en ocasiones teñidas de rojo o morado en el ápice del labelo, fragancia no registrada. **Ovario** terete, delgado, inflado ventralmente detrás del perianto formando una vesícula, 12 mm de largo. **Sépalo dorsal** extendido, angostamente elíptico-oblanceolado, agudo, 5-nervado, 13-15 x 4 mm. **Sépalos laterales** extendidos, oblicuamente elípticos, agudos, dorsalmente carinados hacia el ápice, 5-nervados, 13-15 x 4-5 mm. **Pétalos** extendidos, angostamente oblanceolados, obtusos, 3-nervados, 9-13 x 1.5-2 mm. **Labelo** unido a la columna, entero, cordiforme, ápice truncado, margen eroso, 9 x 10 mm; bicalloso, callos subglobosos; unicarinado, la carina carnosa, roma, en el centro de la lámina y casi hasta el ápice del labelo. **Columna** recta, dilatada hacia el ápice, 8 mm de largo. **Clinandrio** reducido, entero. **Antera** y **Polinios** no vistos. **Nectario** penetrando 1/3 del ovario, inflado detrás del perianto, no ornamentado. **Cápsula** no vista.

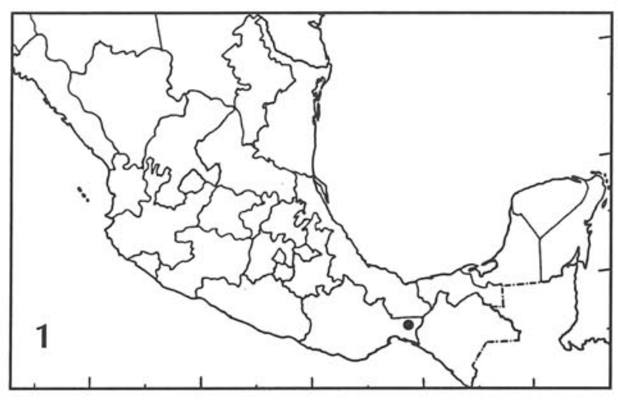
Branching epiphyte. **Roots** fleshy. **Stems** erect, branched, produced from an upper internode of the previous stem, progressively smaller. **Leaves** narrowly elliptic-lanceolate, acute, grass-like. **Inflorescence** apical, from the mature stem; peduncle short, filiform; rachis flexuose. **Floral bracts** lanceolate, acute, shorter than the ovary. **Flowers** 3-4, simultaneous, resupinate, green, sometimes the lip with the apex somewhat reddish or purple. **Ovary** thin, somewhat thickened into a vesicle behind the perianth. **Sepals** spreading, narrowly elliptic to elliptic-oblanceolate, acute, 5-veined; the **laterals** dorsally carinate towards the apex. **Petals** narrowly oblanceolate, obtuse, 3-veined. **Lip** united to the column, entire, cordiform, apex truncate; bicallose; with a fleshy thickened keel running down the middle to the apex. **Column** straight. **Clinandrium** reduced, entire. **Nectary** penetrating 1/3 of the ovary, inflated behind the perianth.

OTHER SPECIMENS: MÉXICO: Chiapas: Selva Negra, *Soto 6328 & Pérez* AMES! AMOx2! K! **Oaxaca:** San Miguel Chimalapa: Cerro El Quetzal, *Wendt 5061 et al.* CHAPA! San Miguel Chimalapa: Cerro Baúl, *Wendt 5044-A et al.* CHAPA! Santa María Chimalapa: Arroyo el Faisán, *Maya 3556* MEXU!

DISTRIBUTION AND ECOLOGY: México: Oaxaca, known from the Chimalapas, from Cerro Baúl and Cerro Quetzal, and Chiapas, Selva Negra. In broad-leaved tropical forest with *Cupressus* and *Oreopanax*, oak forest and cloud forest, 1500-2000 m altitude. Flowering in July.

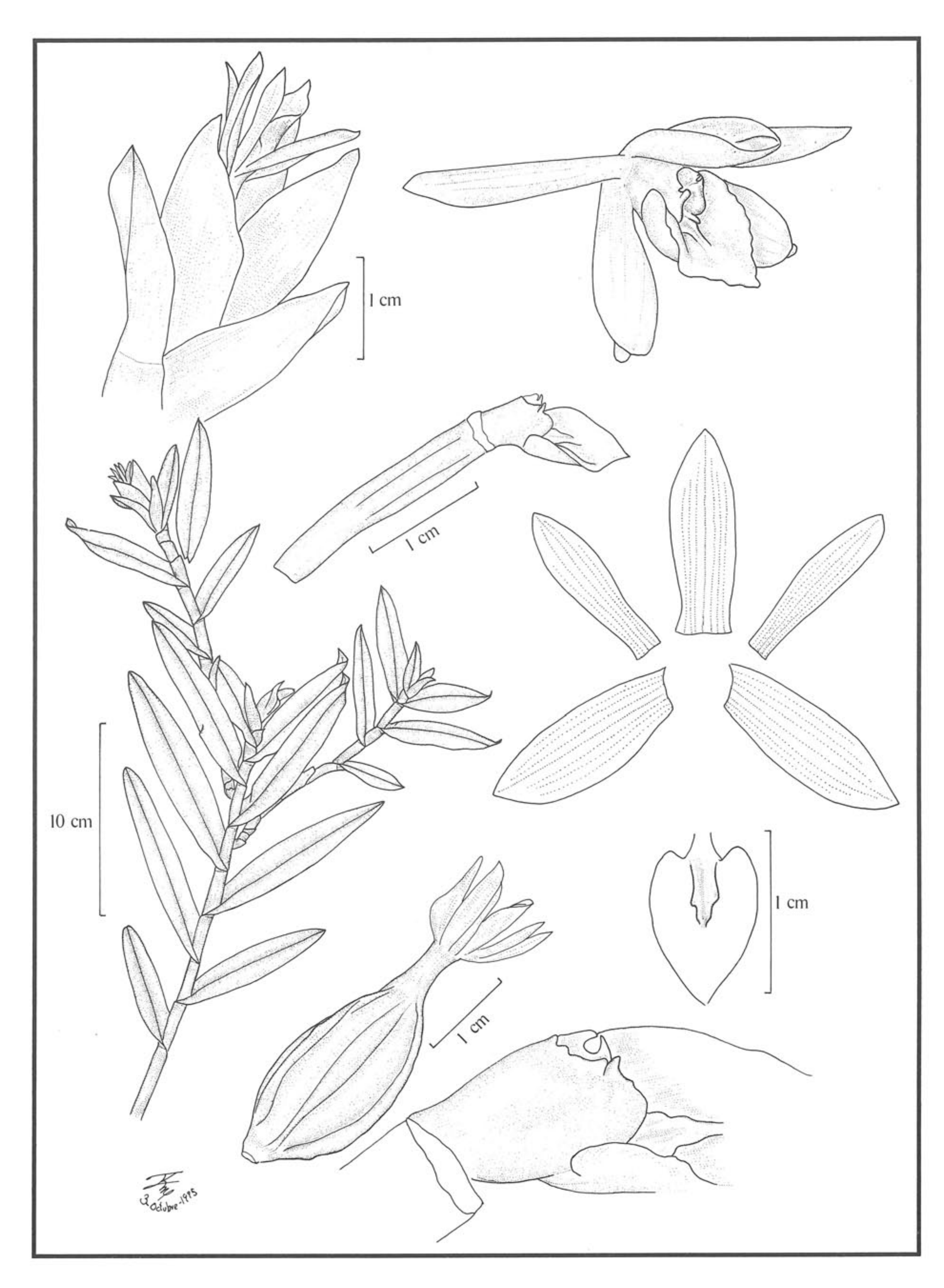
RECOGNITION: *Epidendrum chimalapense* has 10-18 mm wide, grassy leaves, sepals about 3 mm wide and the lip devoid of radiating keels, the ovary forming a vesicle behind the perianth. It is similar to *E. skutchii* which has very long, narrow leaves up to 18 x 0.7 cm, 3.5 mm wide petals, and lip with radiating keels on the disc in addition to the callus and the central keel. It is also closely related to *E. propinquum* A. Rich. & Galeotti which is recognized by the ovary which does not form any vesicle near the perianth, the inflorescence is formed from the apex of a normal, leaf-bearing stem and the triangular acuminate bracts and obtuse petals. *E. lignosum* Lex. is very similar but flowers from abortive stems which are not leaf-bearing. *E. ledifolium* A. Rich. & Galeotti has leathery leaves 4-7 mm wide, acute sepals and bracts are linear-oblong, not acuminate, the anther generally red or purple.

CONSERVATION STATUS: DD (data deficient). Although the cloud forest where this species has been collected is not protected by any official decree and some areas have suffered from fires, it still contains a viable cloud forest with a healthy population of Quetzal birds and other wildlife. These areas were heavily burned during the very dry "Niño" spring of 1998.



ETYMOLOGY: In reference to the area where the species has been collected, the area of Chimalpas, Oaxaca where many interesting plants have been collected in recent years.

Authors: E. Hágsater & G. A. Salazar **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM COCOËNSE Hágsater

Plate 325

EPIDENDRUM COCOËNSE Hágsater, *sp. nov.*

Holotype: COSTA RICA: Puntarenas: Cocos Island, along brook flowing into Wafer Bay, on trees, 18 Apr. 1930, ***H. K. Svenson 333*** AMES 37853! (illustration voucher) Isotypes: AMES 73599! F!

Epidendro *rafael-lucasii* Hágsater simile sed floribus minoribus, columna in duos dentes terminanti.

Hierba epífita, colgante, hasta ca. 80 cm de largo. **Raíces** basales, carnosas, 1-2 mm de grosor. **Tallos** colgantes, ramificados, tipo caña, teretes, rectos, sucesivos, sin haber un tallo principal propiamente dicho, cada tallo termina en una inflorescencia y se produce un tallo nuevo de un entrenudo subapical del tallo anterior, 15-30 x 0.5-0.7 cm. **Hojas** alternas, equidistantes a lo largo de cada tallo, subcoriácea, lisa; vaina tubular, lisa, hasta de 2.7 cm de largo; lámina articulada, angostamente lanceolado-elíptica a ligulada, obtusa, margen entero, 5-12.5 x 1.3-2 cm. **Espata** ausente. **Inflorescencia** apical, florece una sola vez, de 5-6 cm de largo; con una bráctea imbricada con las florales, conduplicada, ovada, aguda, 25-35 mm de largo. **Flores** 3, aparentemente sucesivas, dísticas, coloración amarillo limón. **Brácteas florales** ligeramente más largas que el ovario, ovadas, conduplicadas, imbricadas, 19-29 x 15-18 mm. **Ovario** no inflado, terete, liso, 19 x 3 mm. **Sépalos** entreabiertos, libres, quilla dorsal apical pequeña, glabros, subcoriáceos, 7-nervados; el **dorsal** ovado-elíptico, agudo, margen algo revoluto, 10-12 x 3.5 mm; los **laterales** ovado-lanceolados, 10-12 x 4.5 mm. **Pétalos** extendidos, angostamente elíptico-oblanceolados, agudos, margen extendido, membranáceos, 5-nervados, 10-11 x 2.5 mm. **Labelo** unido a la columna, entero, cordiforme, alargado, margen entero, carnoso, 9.5 x 7 mm; callo en forma de "Y" prolongándose en una quilla. **Columna** recta, gruesa, terminando en un par de dientes agudos a cada lado, 5.5 mm de largo. **Clinandrio** reducido, eroso. **Cápsula** piriforme, 28 x 12 mm, pedicelo reducido, cuello apical 7 mm de largo.

Pendent, branching epiphytic **herb**. **Roots** only at base. **Stems** successive, produced from a subapical internode of the previous stem, there is no main stem as such, all flowering apically. **Leaves** alternate, evenly distributed throughout each stem, articulate, narrowly elliptic-lanceolate to ligulate, obtuse, subcoriaceous. **Inflorescence** apical, flowering only once. **Flowers** 3, apparently successive, distichous, lemon-yellow colored. **Sepals** ovate-elliptic to ovate-lanceolate, acute, 7-veined. **Petals** narrowly elliptic-oblanceolate, acute, 5-veined. **Lip** entire, cordiform, elongate; callus "Y"-shaped. **Column** straight, short. **Clinandrium** reduced, erose. **Capsule** pyriform with an apical neck.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Isla del Coco: near Wafer Bay, *Dressler 4471* CR! bosque de Wafer, *Gómez 3270* F! CRx2! Wafer Bay, *Howell 10190* CAS! *Klawe 1519* US! Cerro Pelón, *Lépiz 339* INB! Cordon Littoral à Wafer Bay, *Pittier 16351* AMESx2! *Valerio 1108* CR! F!

DISTRIBUTION AND ECOLOGY: Endemic to Isla del Coco, epiphytic on trees along streams, 0-400 m. Flowering apparently December to August.

RECOGNITION: *Epiendrum cocoënse* has the same vegetative structure as *E. rafael-lucasii* and *E. santaclarense* Ames, the stems are a succession of relatively short and similar stems in length, 15-30 cm, the leaves 7-15 x 1.3-2 cm, flowering from the apex and producing a new stem near the apex, flowers lemon-yellow, sepals 10-12 mm long, petals 5-veined. *Epidendrum rafael-lucasii* has larger flowers, sepals 16-20 mm long, the column blunt at the apex. *Epidendrum santaclarense* has deep green flowers. *Epidendrum acuñae* Dressler has instead a long main stem with shorter vegetative stems and very short flowering stems. *Epidendrum jimenezii* Hágsater also endemic to Isla de Cocos has a main stem with secondary flowering stems 12 cm long and leaves up to 8 x 1.5 cm, 1-3 white flowers, petals 3-veined. *Epidendrum insulanum* Schltr., the third species of the genus endemic to the island, has main stems to 40 cm long, flowering stems 6-10 cm long, leaves up to 5.9 x 0.8 cm and solitary, lemon-yellow flowers.

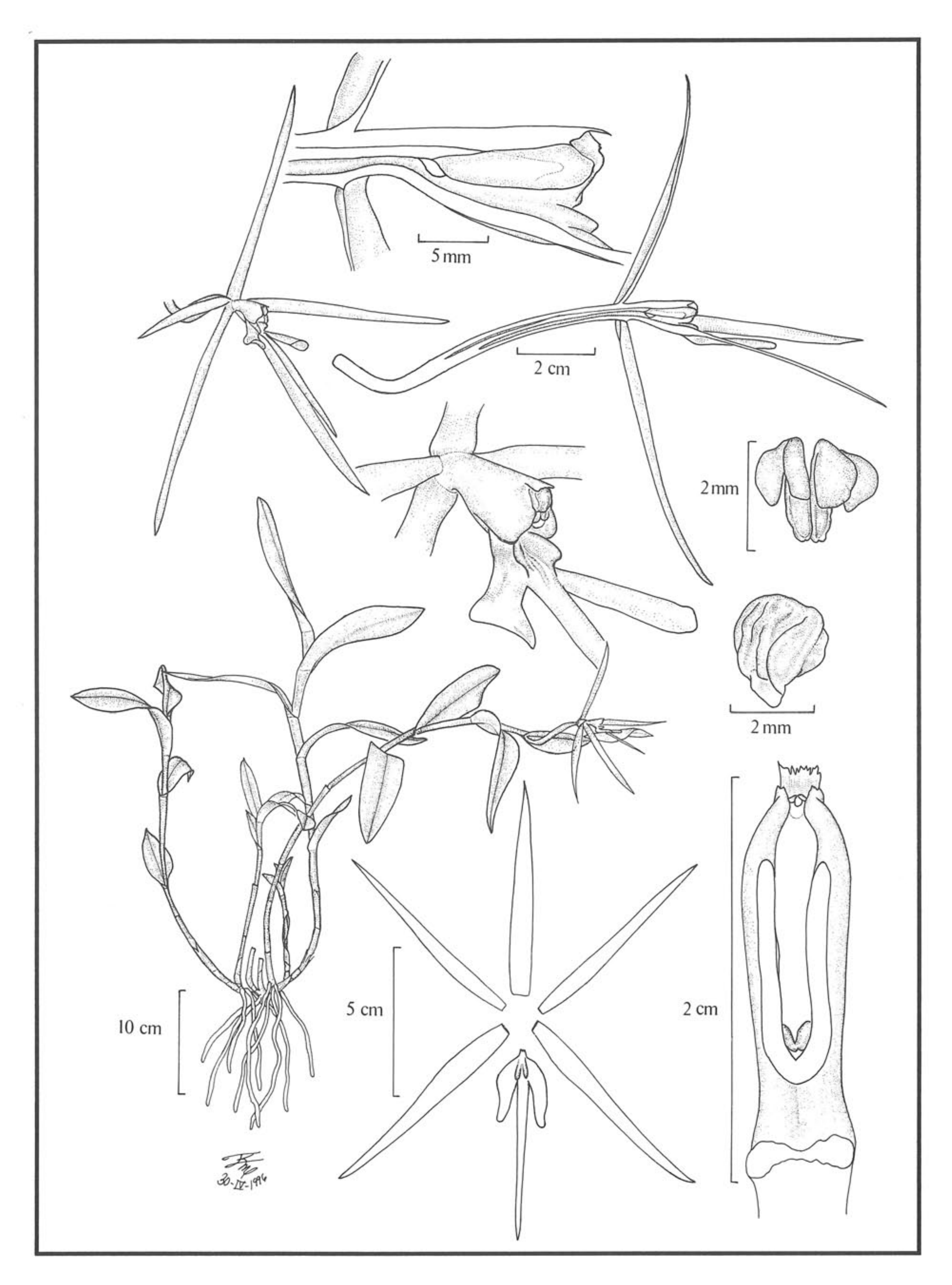


CONSERVATION STATUS: DD (data deficient). As the Isla del Coco is a National Park with restricted access, and the species seems to be abundant, it would appear that it is not endangered.

ETYMOLOGY: From the Spanish "coco", coconut, the name of the island to which this species is endemic.

NOTES: According to Luis Diego Gómez (1970 on herbarium sheet) this species together with *Maxillaria variabilis* Batem. are the only two orchids on Cocos Island. However, *E. cocoense* is quite similar to two other species also endemic to the island: *E. insulanum* and *E. jimenezii*. Robert L. Dressler pointed out many years ago (pers. comm.) that there may be more than one species of *Epidendrum* on the island.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM COCORNOCTURNUM Hágsater

Plate 326

EPIDENDRUM COCORNOCTURNUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Municipio Cocorná, Quebrada El Viao, colectada por Francisco "Pacho" López, cult. Colomborquídeas, pressed 29 Nov. 1996, ***E. Hágsater 11652*** COL! (illustration voucher). Clonotypes: 20 Dec. 1996 AMO! 11 June 1997 JAUM! 9 Jan. 1998 AMES! QCNE!

Epidendro nocturno Jacq. Simile sed caulibus ancipitibus, foliis paucis apice bilobato, floribus magnis viridibus, labelli basi alba, ovario 60-80 mm longo, capsula corpore centrato sui longitudinis dimidium occupanti.

Hierba epífita, cespitosa, de 50 cm de alto. **Raíces** basales, delgadas, carnosas, blancas, de 4-5 mm de grosor. **Tallos** sencillos, tipo caña, teretes en la base, ancipitosos en el ápice, flexuosos, más anchos hacia el ápice, formados de 7-8 entrenudos, 30-40 x 0.4-1.2 cm. **Hojas** 4-5, distribuidas a lo largo de la mitad apical del tallo, subcoriáceas; vaina lisa, diminutamente estriada cuando seca, 3.5-5 cm de largo; lámina delgada, flexible, elíptica a angostamente lanceolada, ápice redondeado, bilobado, con una quilla baja en el dorso, verdes, 8-18 x 2.8-4.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece en años consecutivos, pluriracemosa, cubierta por la base de la hoja apical; raquis 1-2 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, 4 mm de largo. **Ovario** terete, no ornamentado, 60-80 x 4 mm. **Flores** varias, sucesivas, una a la vez, resupinadas, sépalos y pétalos verdes, labelo blanco en la base y verde en el ápice de los lóbulos, callos y carina amarillos, columna blanca, fragancia nocturna, 13-16 cm de diámetro. **Sépalos** extendidos, angostamente lanceolados, acuminados, con los lados revolutos, 13-nervados, 64-80 x 6.5-8 mm. **Pétalos** inflexos, angostamente lanceolados, acuminados, 9-nervados, 72 x 4 mm. **Labelo** unido a la columna, trilobado, base cuneada, 60-63 x 17 mm; bicalloso, callos aplandos, alargados, con una carina baja y corta en medio; lóbulos laterales semilanceolados, oblicuos, con el ápice redondeado, 22-29 x 5 mm; lóbulo medio 2 1/2 veces el largo de los lóbulos laterales, linear-lanceolado, agudo, recto, 50-57 x 2.5 mm. **Columna** recta, 19-21 mm de largo. **Clinandrio** prominente, fimbriado-dentado. **Antera** obovoide, con un surco al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de menos de 1/5 de la longitud de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** 75 mm de largo, con el cuerpo elipsoidal centrado (45 x 25 mm) y pedicelo (20 mm) y cuello cortos (14 mm).

Caespitose epiphytic **herb. Roots** basal, thin, fleshy. **Stems** simple, cane-like, terete below, ancipitose and widened above, flexuose. **Leaves** distributed along the apical half of the stem; blade subcoriaceous, thin, flexible, elliptic to narrowly lanceolate, rounded and bilobed. **Inflorescence** producing successive racemes over several years, hidden within the base of apical leaf. **Ovary** terete. **Flowers** several, successive, one at a time, resupinate, sepals and petals green, lip white at base and green at the apex of the lobes, callus and keel yellow, column white, fragrant at night. **Sepals** narrowly lanceolate, acuminate**. Petals** narrowly lanceolate, acuminate. **Lip** 3-lobed, base cuneate; bicallose, the callus flat, long, with a short, low carina in the middle; lateral lobes semilanceolate, oblique, rounded; midlobe 2 1/2 times longer than the lateral lobes, linear-lanceolate, acute, straight. **Column** straight. **Clinandrium** prominent, surpassing the body of the column, fimbriate-dentate. **Nectary** penetrating half the ovary. **Capsule** with body centered and occupying half the length.

OTHER SPECIMENS: COLOMBIA: Antioquia: Frontino, *Lehmann 8312* AMES! K! cult. Guaine, *Lodoño sub Múnera & Escobar 148* AMO! El Santuario, *Uribe 6752* COL! **Valle del Cauca:** Farallones de Cali, *Lehmann 2021* G! **ECUADOR: Carchi:** Maldonado-Tulcán, *Hágsater et al. 11332* AMO!

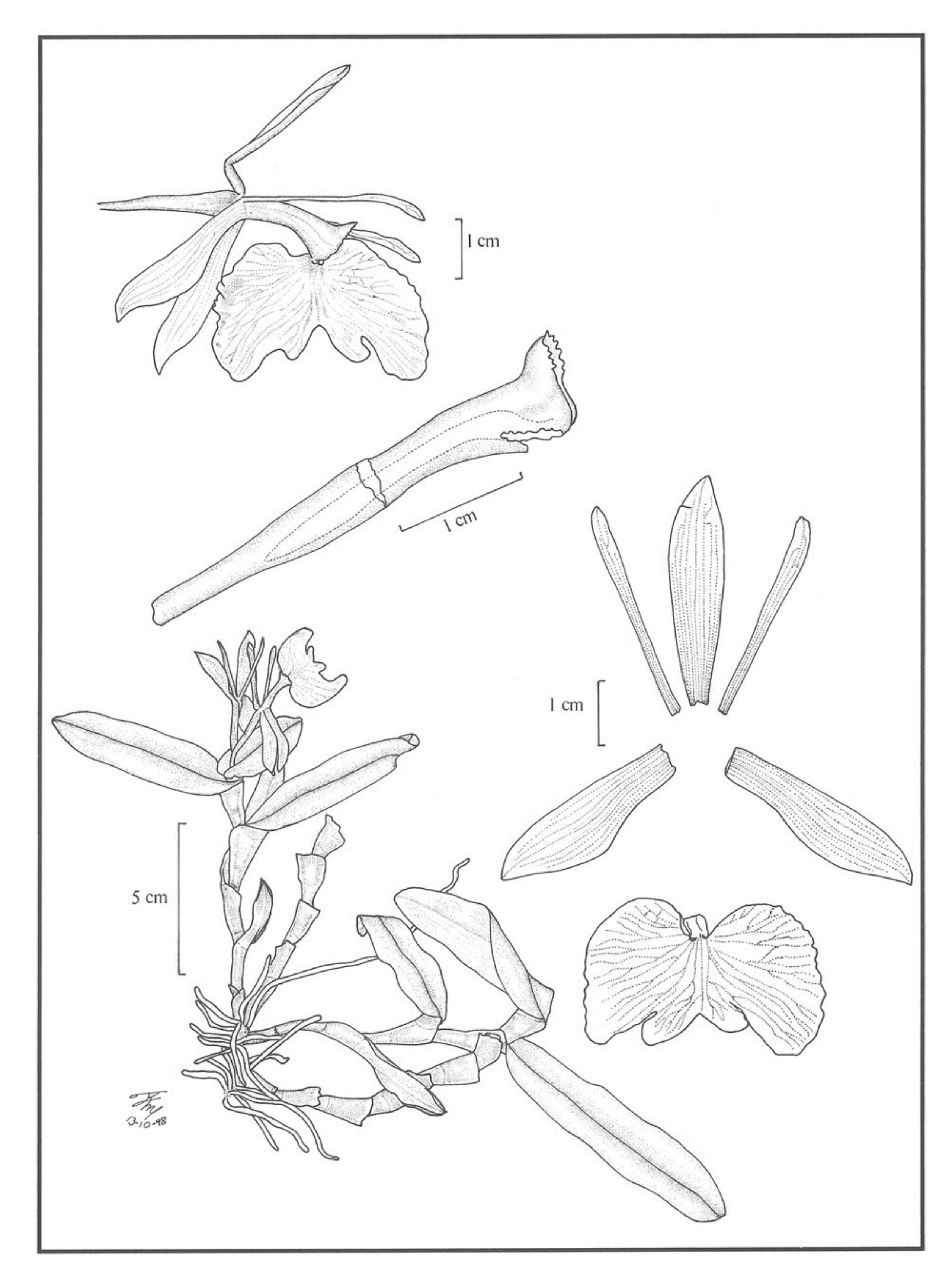
OTHER RECORDS: COLOMBIA: Antioquia: Cocorná, *Escobar 5035* AMO! (slide), **Orquídeas Nativas de Colombia** 2: 173, pl. 187. 1991. (This illustration probably corresponds to *Lodoño sub Múnera & Escobar 148).*



DISTRIBUTION AND ECOLOGY: Recorded from the eastern slopes of the Cordillera west of the valley of the Río Magdalena in Antioquia and west of the Río Cauca in Valle del Cauca, at 1500-2080 m altitude. Also on the upper western slope of the Cordillera Occidental in northern Ecuador, at 2090 m. Flowering apparently throughout the year.

RECOGNITION: *Epidendrum cocornocturnum* is recognized by its flattened stems, the relatively few, large, bilobed leaves, the large green flowers with only the basal half of the lip and the column white, sepals 64-80 mm long, and intermediate sized ovary 60-80 mm long, and is found at higher altitudes, between 1500 and 2100 m. It closely resembles *E. tridens* var. *briegeri* Bock, which seems similar in all measurements but is found at sea level in the Chocó, on the Pacific side of the Cordillera Occidental, and is recognized by its acute leaves, neither rounded nor bilobed. *Epidendrum pseudonocturnum* Hágsater & Dodson has the ovary of similar length but smaller flowers, the sepals 48-52 mm long, and the leaves, though similar in shape, are somewhat smaller, more numerous, and stiff, upright in natural position.

ETYMOLOGY: In reference to the Municipality of Cocorná, where the type was collected, and "*nocturnum*" for the group to which the species belongs.



EPIDENDRUM CREMERSII Hágsater & L. Sánchez

Plate 327

EPIDENDRUM CREMERSII Hágsater et L. Sánchez, *sp. nov.*

Holotype: FRENCH GUIANA: Huat Tampoc: Saut Pier Kourou. Sur les berges et dans les petites îles au milieu du saut, [2°56'S 53°38'W], 27 Mar. 1977, ***G. Cremers 4525*** CAY! (illustration voucher).

Epidendro barbeyano Kraenzl. simile sed labello trapezoidali, lobis lateralibus labelli obovatis, columna arcuata, clinandrio prominenti eroso.

Hierba epífita, cespitosa, 7-18 cm de alto. **Raíces** basales, carnosas, filiformes a delgadas, 1.5-2 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ligeramente flexuosos, 4-10 x 0.3-0.9 cm. **Hojas** 3-6, equidistantes a lo largo del tallo; vaina lateralmente comprimida, lisa, hasta 1-2 cm de largo; lámina oblonga, ápice desigualmente bilobado, obtuso, no ornamentada, margen entero, extendido, carina dorsal baja, coriácea, verde, 3-9 x 1.3-2.4 cm. **Espata** ausente. **Inflorescencia** apical en el tallo maduro, florece una sola vez, sésil. **Bráctea floral** mucho más corta que el ovario, ovada, aguda, 2 x 1.5 mm. **Flores** 1-2(3), simultáneas, resupinadas, verdes, fragancia no registrada. **Ovario** pedicelado, inflado en el tercio apical, terete, no ornamentado, 30-35 x 2.0-3.5 mm. **Sépalos** subcoriáceos, extendidos, glabros, libres, elíptico-lanceolados, agudos a obtusos, margen entero, ligeramente revoluto, 7-nervado; el **dorsal** 28-30 x 3.5-5.5 mm; los **laterales** oblicuos, 27.5-29 x 5-7mm. **Pétalos** entre abiertos, membranáceos, linear-lanceolados, obtusos, margen entero, extendido, 3-nervados, 28-30 x 1.4-1.7 mm. **Labelo** unido a la columna, base profundamente cordada, trapezoide, trilobado, membranáceo, 20-23 x 35-36 mm; bicalloso, los callos muy pequeños, subglobosos; lóbulos laterales sobrepasando el lóbulo medio, obovados, margen sinuoso, 10-12 x 20-23 mm; lóbulo medio mucho más pequeño que los laterales, separado de éstos por senos profundos, profundamente emarginado y formando dos lóbulos divergentes, subrectangulares, redondeados, 6-7 x 10-16 mm. **Columna** arqueada, delgada, 17-18 x 3-3.5 mm. **Clinandrio** promiente, en forma de embudo, eroso. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** subesférica, 20 x 14 mm, con pedicelo de 7.5 mm de largo.

Caespitose epiphyte. **Stems** simple, reed-like, laterally compressed. **Leaves** 3-6, oblong, unequely bilobed, coriaceous. **Inflorescence** apical, flowering only once, sessile. **Flowers** 1-2(3), resupinate, simultaneous, green. **Ovary** inflated along apical third. **Sepals** spreading, glabrous, free, subcoriaceous, elliptic-lanceolate, acute to obtuse, margin entire, revolute, 7-veined, the **laterals** oblique. **Petals** linear-lanceolate, obtuse, margin entire,3-veined. **Lip** united to the column, trapezoid, 3-lobed; bicallose, the callus subglobose, very small; lateral lobes obovate, margin sinous; midlobe very small, separated of the lateral by deep sinus, forming two divergent, subrectangular, rounded lobes. **Column** arcuate. **Clinandrium** prominent, erose. **Nectary** penetrating 1/2 of the ovary.

OTHER SPECIMENS: FRENCH GUIANA: Amont du premier saut du Marouini Environs d'Antecume Pata, confluent de l'Itany (Haut Maroni) et du Marouini, *Cremers 4996* CAY!

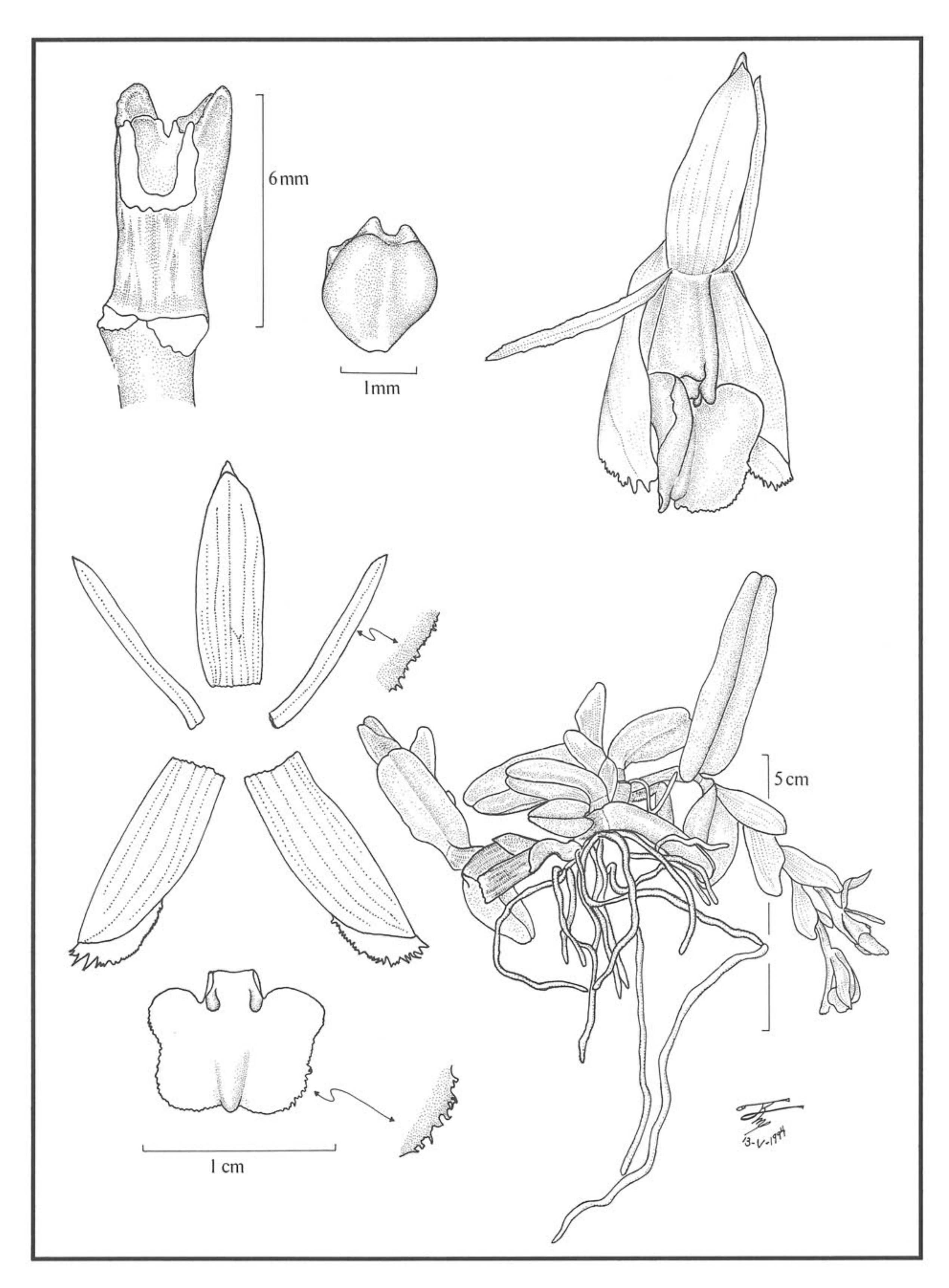
DISTRIBUTION AND ECOLOGY: Known only from Central French Guiana. Flowering from November to March.

RECOGNITION: *Epidendrum cremersii* belongs to the *Epidendrum difforme* Jacq. group and can be recognized by lateral compressed stems, trapezoid, 3-lobed lip, ovate lateral lobes, surpasing the very small, bilobed midlobe, subrectangular, divergent lobes, arcuate column, prominent, erose clinandrium. *E. barbeyanum* from Costa Rica and Panama, has a transversally elliptic lip, dolabriform lateral lobes, straight column, and reduced clinandrium. *Epidendrum althausenii* A. D. Hawkes, an amazonian species, has a subcuadrate lip, semiovate lateral lobes, without deep sinus, emarginate midlobe, and a straight column. *Epidendrum oldemanii* E. A. Christenson also from Central French Guiana has graduating in size towards the apex leaves, small flowers, sepals 14-16.5 mm long, 1-veined petals, transversely reniform-bilobulate lip.

CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: Named in honor of Georges Cremers, who collected the type specimen.

Authors: E. Hágsater & L. Sánchez Saldaña Illustrator: R. Jiménez M. Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM CROATII Hágsater

Plate 328

EPIDENDRUM CROATII Hágsater, *sp. nov.*

Holotype: PANAMA: Coclé: north slope and summit of Cerro Pilón, 900-1173 m, 16 Mar. 1973, ***T. B. Croat 23240*** MO! (illustration voucher).

Epidendro coriifolio Lindl. simile sed bracteis floralibus late rotundatis, sepalis carinatis, carina dentata, labelli marginibus petalisque minute dentatis, differt.

Hierba epífita, cespitosa, ca. 4 cm de alto. **Raíces** basales, carnosas, delgadas, ca. 1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos hacia el ápice, rectos, 0.8-3 x 0.3-0.45 cm. **Hojas** 2-3, dísticas, distribuidas hacia el ápice del tallo, coriáceas, lisas; vaina lateralmente comprimida, lisa, hasta de 1.1 cm de largo; lámina elíptica a oblonga, ápice desigualmente bilobado, margen entero, verde, 1.2-4 x 0.8-1.2 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, dística, erecta, flexuosa, 2-5 cm de largo; pedúnculo con 1-2 brácteas, semejantes a las florales, no imbricadas, conduplicadas, de 8-14 mm de largo; raquis lateralmente comprimido, ancipitoso, no ornamentado. **Brácteas florales** más cortas que el ovario, ovadas, conduplicadas, redondeadas, 10-14 mm de largo; en los pedúnculos secos, ya sin flores, son entreabiertas, no imbricadas, algo arqueadas hacia adentro, no agudas. **Flores** 1-2, simultáneas, "verdosas". **Ovario** terete, no ornamentado, ca. 12 mm de largo. **Sépalo dorsal** reflexo, oblongo-elíptico, dorsalmente carinado, mucronado, margen extendido, 5-nervado, 11 x 3 mm. **Sépalos laterales** entreabiertos, ovados, mucronados, dorsalmente carinado la carina prominente, irregularmente dentada, margen extendido, 7-nervados, 12 x 4 mm. **Pétalos** entreabiertos, lineares, agudos, margen extendido, finamente dentados, 1-nervados, 11 x 1 mm. **Labelo** unido a la columna, entero,subcuadrado, base cordada, ligeramente emarginado, con una carina central roma formando un apículo grueso, margen irregularmente dentado, 7 x 9 mm; bicalloso. **Columna** recta, gruesa, 6 mm de largo. **Clinandrio** reducido, entero. **Antera** ovada, 4-locular. **Rostelo** apical, hendido. **Cápsula** no vista.

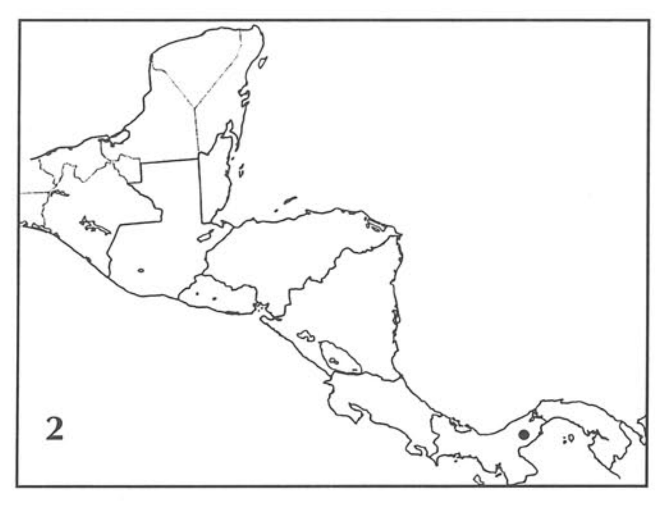
Caespitose epiphyte. **Stem** simple, laterally compressed toward the apex, erect. **Leaves** 2-3, distichous, elliptic to oblong, apex bilobed, coriaceous. **Inflorescence** apical from mature growth, flowers only once, distichous, erect, flexuous; rachis laterally compressed, ancipitose. **Floral bracts** shorter than ovary, conduplicate, rounded, arched inward. **Flowers** 1-2, simultaneous, "greenish". **Ovary** not inflated. **Dorsal sepal** oblong-elliptic, carinate, 5-veined. **Lateral sepals** ovate, mucronate, dorsally prominently keeled, the keel dentate, 7-veined. **Petals** linear, acute, margin minutely dentate, 1-veined. **Lip** united to the column, entire, subquadrate, base cordate, slightly emarginate, with a low, thickened median keel forming a fleshy apicule, margin dentate; bicallose. **Column** straight. **Clinandrium** reduced. **Anther** ovate, 4-celled.

DISTRIBUTION AND ECOLOGY: Known only from the type locality, epiphyte in wet forests on Cerro Pilón, Coclé, Panama, ca. 900-1200 m altitude. Flowering in March.

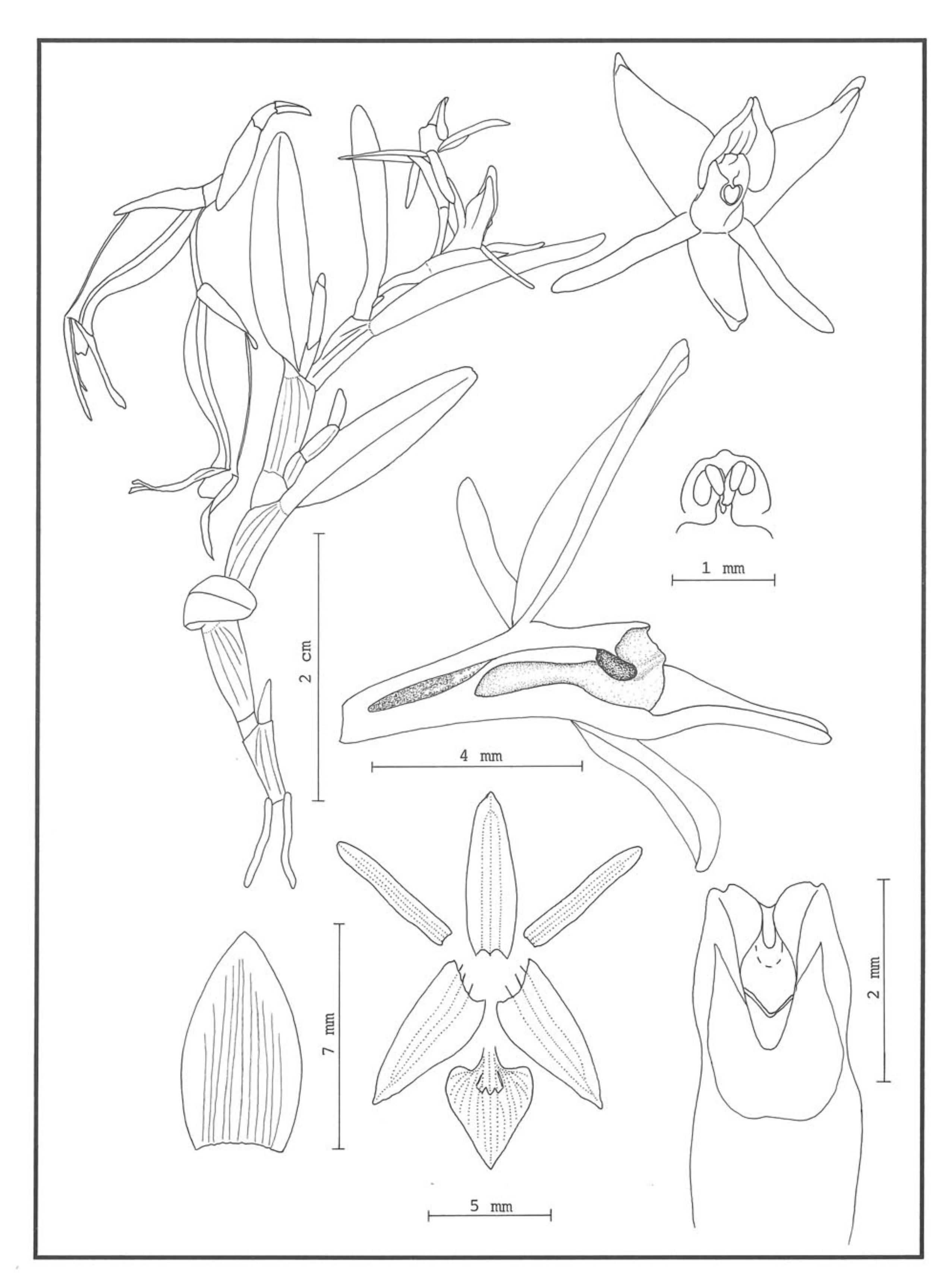
RECOGNITION: Closely related to *Epidendrum coriifolium*, *E. croatii* is the smallest species of the group, and can be recognized by the floral bracts which are rounded, rounded, short, not imbricating, the dentate keels of the sepals and margin of the lip and petals are unique to this group. *Epidendrum summerhayesii* Hágsater also has rounded bracts, but these are imbricating and plants are large and deep green with maroon tinge, the successive, numerous flowers usually purple. *Epidendrum coriifolium* is found in Mexico and Guatemala, and has compact plants, the inflorescence about as long as the apical leaf, and flowers are simultaneous. *Epidendrum caluerorum* Hágsater has long, narrow leaves and acute, subparallel bracts about as long as the ovary, on a long peduncle.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Dedicated to Dr. Thomas B. Croat, specialist in the Araceae, who has collected widely in Tropical America and collected the type specimen.



Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM ELCIMEYAE Hágsater & García-Cruz

Plate 329

EPIDENDRUM ELCIMEYAE Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Cartago: Orillas del Río Purisil, 1350 m, pressed 20 Dec. 1982, ***C. Horich sub E. Hágsater 6948*** AMO! (illustration voucher).

Epidendro microdendro Rchb. f. simile sed labello breviore acuto non acuminato, foliis brevioribus.

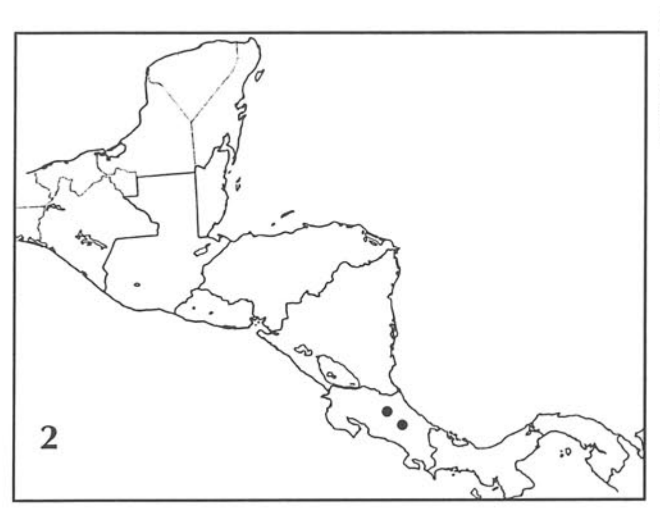
Hierba epífita, ca. 7-20 cm de alto. **Raíces** filiformes, basales, 1 mm de grosor. **Tallos** ramificados, flexuosos, ancipitosos, casi completamente cubiertos por vainas foliares. **Hojas** numerosas, distribuidas a todo lo largo de los tallos, coriáceas; vaina tubular, ancipitosa, longitudinalmente estriada, transversalmente rugosa, especialmente al envejecer, verde claro a oscuro o amoratada, algo dilatada hacia el ápice, 4-9 x 3 mm; lámina articulada, angostamente lanceolada, ápice bilobado, transversalmente rugosa, en el mismo plano del tallo, haz de color verde oscuro, envés más claro y grisáceo, con la quilla de color morado-pardo oscuro, 1.7-1.8 x 0.4 cm. **Espata** ausente. **Inflorescencia** apical, en los tallos principal y laterales, racemosa, flexuosa, ca. 2.5 cm de largo; pedúnculo ancipitoso; raquis filiforme. **Brácteas florales** claramente más largas que el ovario, ovadas, agudas, conduplicadas, papiráceas y pardas aún en flores frescas, 6-8 x 4 mm. **Flores** 2-3, complanadas, alternas, no resupinadas, verde-amarillentas. **Ovario** dilatado hacia el perianto, terete, 3.5 mm de largo. **Sépalo dorsal** extendido, angostamente lanceolado, agudo, fuertemente mucronado, 3-nervado, 6.5 x 2 mm. **Sépalos laterales** entreabiertos, triangular-ovados, agudos, ligeramente arqueados en posición natural, fuertemente mucronados, 3-nervados, 7 x 2.7 mm. **Pétalos** extendidos, angostamente oblongos, obtusos, 3-nervados, 6 x 0.9 mm. **Labelo** unido a la columna, entero, triangular-cordado, agudo, en forma de cucharón en posición natural, 4 x 3 mm; unicallosos, tridentado; disco con 3 nervaduras centrales formando quillas romas. **Columna** recta, corta y gruesa, 2 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas de longitud similar a los polinios, granulosas; viscidio semilíquido. **Rostelo** hendido, subapical. **Lóbulos laterales de la cavidad estigmática** reducidos. **Nectario** penetrando 1/3 del ovario, ancho, no ornamentado. **Cápsula** ovoide, sésil, 13-14 x 6 mm, en el ápice formando un cuello de unos 2.5 mm de largo.

Epiphytic, branched **herb**. **Roots** filiform. **Stems** branched, flexuous, ancipitous. **Leaves** distributed throughout the stems, coriaceous; sheath ancipitous, striated and rugose; blade articulate, narrowly lanceolate, apex bilobed, rugose. **Inflorescence** apical, from the main stem and branches, racemose; peduncle ancipitose; rachis filiform. **Floral bracts** longer than the ovary, ovate, acute, conduplicate, papiraceous. **Flowers** 2-3, complanate, alternate, non-resupinate, yellowish-green. **Ovary** dilated towards the perianth. **Dorsal Sepal** spreading, narrowly lanceolate, acute, 3-veined. **Lateral sepals** partly spreading, triangular-ovate, acute, 3-veined. **Petals** spreading, narrowly oblong, obtuse, 3-veined. **Lip** entire, triangular-cordate, acute; callus tridentate; 3 veins forming low rounded keels on the disc. **Column** straight, short and thick. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicules granulose; viscidium semiliquid. **Rostellum** slit. **Nectary** penetrating 1/3 of the ovary, wide, not ornamented. **Capsule** ovoid, sessile, with a short tapering neck at the apex of the body.

OTHER SPECIMENS: COSTA RICA: Limón: Región de San Carlos, *Riog 8* CR! F!

RECOGNITION: *Epidendrum elcimeyae* has a branching habit, without an obvious main stem in large, adult plants, the stems are ancipitious, very flat, leaves are less than 20 mm long, especially on the main stem, and it has a 2-3 flowered inflorescence with the rachis filiform, the acute, triangular-cordiform lip with a tridentate callus. It is easily confused with its sister species, *E. microdendron* which is distinguished by its long acuminate lip, and the longer leaves, those of the main stem being over 25-35 mm long. The plant is similar in size and shape to that of *E. cordiforme* C. Schweinf., but that species has terete stems and differently shaped floral segments, the petals and lip being wider. *Epidendrum microdendron* is the more common species, from higher altitude, being found mainly at 2000-3100 m. *Epidendrum chirripoënse* Hágsater is similar but is larger in every way, the leaves of the main stem 45 mm long, the lip being triangular, cordate and acute but ecallose.

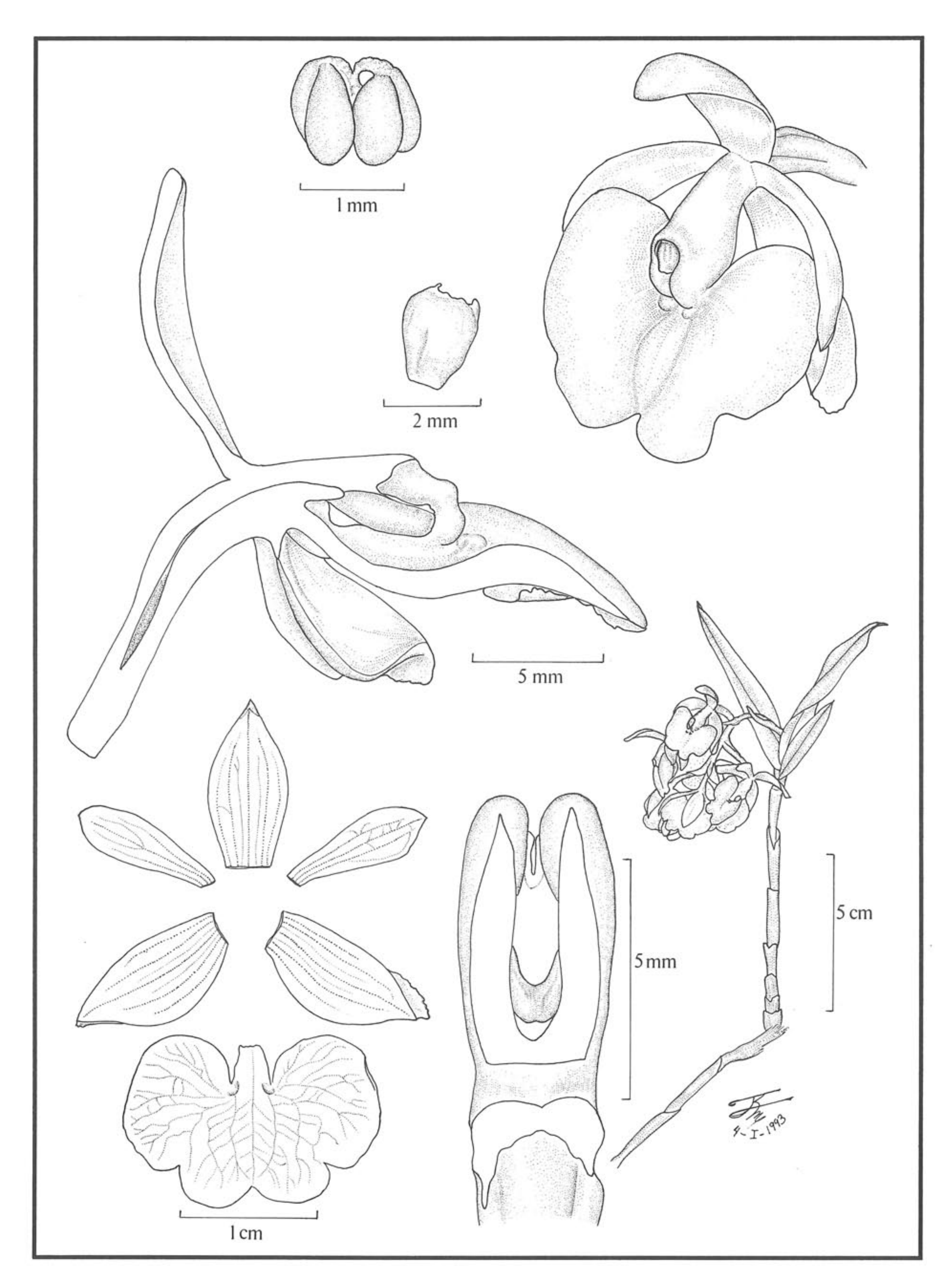
DISTRIBUTION AND ECOLOGY: Apparently restricted to the Atlantic slope and lowlands of Costa Rica, up to about 1350 m altitude. Flowering in cultivation in December.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Elcimey Baldizón, companion of Clarence Kl. Horich, who accompanied him on some of his field trips. She also accompanied the senior author together with Clarence on several occasions.

Authors: E. Hágsater & J. García-Cruz **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM ENVIGADOËNSE Hágsater

Plate 330

EPIDENDRUM ENVIGADOËNSE Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Municipio: Envigado, Alto de las Palmas, 2500 m, floreció en Colomborquídeas, 1 Aug. 1993, ***R. Escobar 5338*** AMO! (illustration voucher).

Epidendro curtisii A. D. Hawkes simile sed petalis latioribus 3-nervatis, oblanceolatis, labello latiore.

Hierba epífita, simpodial, ca. 40 cm o más de alto. **Raíces** basales, carnosas, gruesas. **Tallos** sencillos, tipo caña, teretes, rectos, el tallo nuevo se origina de un entrenudo intermedio del tallo anterior, ca. 8 x 0.3 cm; cubiertos por vainas tubulares, papiráceas. **Hojas** 2-3, alternas, distribuidas hacia el ápice de cada tallo, subcoriáceas, vaina tubular, lisa, ca. 1 cm de largo; lámina angostamente lanceolada, aguda, margen entero, lisa, carinada en el ápice, verde, 3.7-6.1 x 0.7-0.9 cm. **Espata** ausente. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, racemosa, compacta, arqueada, 5 cm de largo; pedúnculo arqueado, no ornamentado, con una bráctea cerca de la base, conduplicada, triangular-oblonga, obtusa, de 28 mm de largo. **Brácteas florales** más cortas que el largo del ovario, triangulares, acuminadas, 5-9 x 2-3 mm de largo. **Flores** 7-8, simultáneas, agregadas, compactas, resupinadas, amarillentas, columna verde en la base, fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 7-16 mm de largo. **Sépalos** extendidos, libres, elípticos, agudos, glabros, carnosos, margen extendido, 5-nervados, con un nervio secundario a cada lado del central, 12-13 x 6-6.5 mm; los **laterales** oblícuos, prominentemente carinados, la carina con el margen eroso, dándole al botón floral un ápice alado y bidentado. **Pétalos** extendidos, oblanceolados, obtusos, margen extendido, membranáceos, 3-nervados, las nervaduras ramificadas hacia arriba, 11 x 3.5 mm. **Labelo** unido a la columna, trilobado, carnoso, convexo en posición natural, 13 x 17.5-19 mm; bicalloso, callos globosos poco evidentes; tricarinado, carinas bajas, la central roma, las laterales muy cortas; lóbulos laterales oblicuamente elípticos, sin sobrepasar al lóbulo medio, margen entero; lóbulo medio bilobado, los lóbulos semiorbiculares, ápice ampliamente emarginado. **Columna** recta, gruesa, 8 mm de largo. **Clinandrio** reducido, entero. **Antera** ovada, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** hendido, apical. **Lóbulos laterales del estigma** de un cuarto del largo de la cavidad estigmática. **Nectario** apenas penetrando hasta la mitad de la columna, no ornamentado. **Cápsula** no vista.

Sympodial epiphyte. **Roots** fleshy, thick, from the base of the plant. **Stems** simple, terete, erect, the new stem arising from an intermediate internode of the previous stem, covered by papiraceous sheaths. **Leaves** 2-3, towards the apex of the stem, subcoriaceous, sheath tubular, blade narrowly lanceolate, acute, smooth, green. **Inflorescence** apical, from mature growth, flowers only once, racemose, arching; bract of the peduncle conduplicate, very long. **Floral bracts** shorter than the ovary, triangular, acuminate. **Flowers** 7-8, simultaneous, resupinate, yellowish, the base of the column greenish. **Ovary** terete, not inflated. **Sepals** spreading, free, elliptic, acute, margin spreading, 5-veined with a secondary vein on each side of the mid-vein; the **laterals** oblique, prominently keeled, the keel with erose margin, giving the bud a winged appearance. **Petals** spreading, oblanceolate, obtuse, margins extended, membranaceous, 3-veined, the veins branched above. **Lip** united to the column, 3-lobed, fleshy, convex in natural position; bicallose, callus globose, 3-carinate, low, central keel rounded, the lateral shorter; lateral lobes obliquely elliptic, margin entire; the midlobe bilobed, widely emarginate, margins erose. **Column** straight, thick. **Clinandrium** reduced, entire. **Anther** ovate, with a rounded keel in front, 4-celled. **Nectary** penetrating to the middle of the column, not ornamented.

OTHER SPECIMENS: COLOMBIA: Antioquia: La Unión, *Dodson et al. 15284* AAU! AMES! RPSC! SEL! San Pedro, *Bro. Thomas 1002* US!

DISTRIBUTION AND ECOLOGY: Colombia, Antioquia, from the region of Envigado east of Medellín, 2500-2650 m. Flowering in August-September.



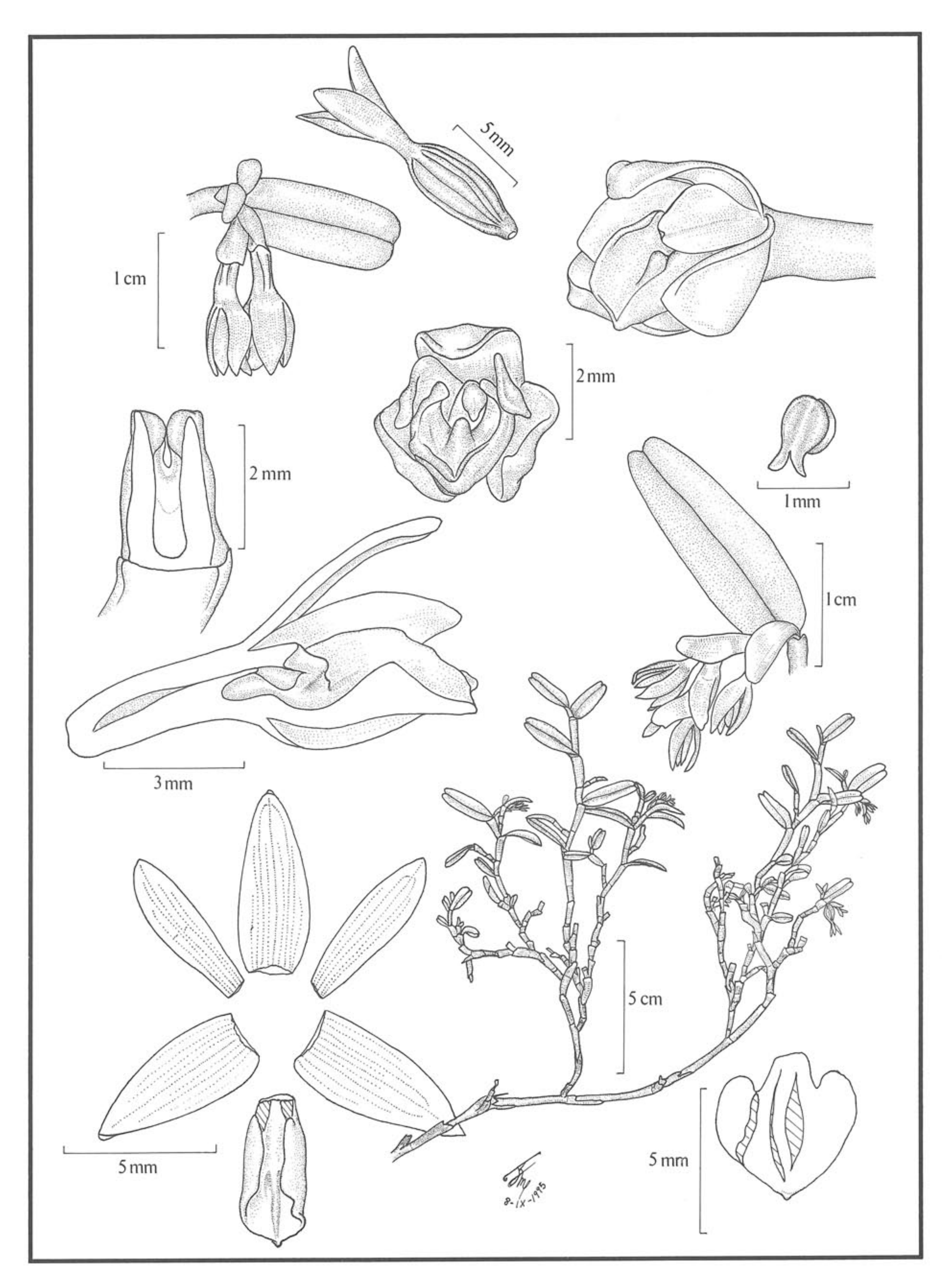
RECOGNITION: *Epidendrum envigadoënse* belongs to the *E. arbuscula* Lindl. group, and is most closely related to *E. curtisii*. The group is characterized by the new growth produced from a middle internode of the previous growth, and thick, fleshy roots produced more or less at the base of all stems, a growth mode often described as "branching" even when a stem only produces one new stem. It can be distinguished by the clearly 3-lobed lip 17.5-19 mm wide, the mid-lobe somewhat smaller than the lateral lobes and separated from them by a very narrow slit without forming an isthmus, the apical lobe very shallow emarginate, and the yellowish, simultaneous flowers, the column 8 mm long, the base green. *E. curtisii* has narrower petals, apparently 1-veined, the lip less than 5 mm wide. *E. amayense* Hágsater has a bilobed lip, the column 5 mm long.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the municipality of Envigado, where the type was collected.

REFERENCE: "*Epidendrum superpositum* Garay", photograph in **Orquideología** 2(3): 27. 1967.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM ERYTHROSTIGMA Hágsater **Plate 331**

EPIDENDRUM ERYTHROSTIGMA Hágsater, *sp. nov.*

Holotype: PANAMA: Chiriquí; NW of Cerro Punta, at INRENARE station in Parque Amistad, 8°54'N 82°35'W, 2300 m, 17 Oct. 1992, ***M. Richardson sub G. McPherson 15905*** AMO! (illustration voucher, in part, plant). Isotypes: MO, PMA!

Epidendro rugoso Ames simile sed floribus niveis, sepalorum apicibus e rubro vel purpureo suffusis, petalis oblongis, labello cordiformi carina alta carnosaque in centro ferenti.

Hierba epífita o terrestre, ramificada, 20-50 cm de alto. **Raíces** producidas de los entrenudos basales del tallo primario y escasas de la base de las ramas, carnosas, 0.5 mm de grosor. **Tallos** ramificados, tipo caña, flexuosos, lateralmente comprimidos; de los entrenudos basales o medios del tallo principal se producen varias ramas secundarias y de estas otras terciarias, de donde se producen las inflorescencias, que son más cortas y generalmente pueden producir uno o varios crecimientos adicionales cortos cerca del ápice, los principales 30 x 0.15-0.3 cm, los secundarios y terciarios más cortos, 4-11 x 0.15-0.35 cm. **Hojas** 3-8 por tallo, alternas, distribuidas todo a lo largo de cada tallo; vaina tubular, lateralmente comprimida, rugosa y estriada, 0.3-1.6 cm de largo; lámina angostamente oblonga, ápice amplia y desigualmente bilobado, margen entero, subcoriácea, lisa; las de los tallos principales probablemente más grandes, 1.7-2.6 x 0.4-0.5 cm, las de los tallos secundarios menores, 0.8-1.4 x 0.4-0.5 cm. **Espata** ausente. **Inflorescencia** apical, de los tallos secundarios, florece una sola vez de un punto determinado, pero las ramificaciones producen nuevas ramificaciones subapicales y producen nuevas inflorescencias, racemosa, dística, nutante, 1.2-1.5 cm de largo; raquis en zig-zag, no ornamentado, sin bráctea basal en la base de la inflorescencia. **Brácteas florales** iguales a más cortas que el ovario, imbricadas, ovadas, redondeadas, conduplicadas, rugosas, 4-5.5 mm de largo. **Flores** 2-4, resupinadas, sucesivas, 2-3 abiertas a la vez, la basal marchita cuando se abre el último botón, coloración blanca nívea, ápice de los sépalos rojo a morado. **Ovario** no inflado, terete, no ornamentado, 4.7 x 1.4 mm. **Sépalo dorsal** entreabierto, ovado-lanceolado, obtuso, quilla dorsal ausente, mucronado, glabro, carnoso, margen extendido, 9-nervado, 6 x 2.5 mm. **Sépalos laterales** entreabiertos, ovado-lanceolados, agudos, quilla dorsal apical baja, mucronados, glabros, carnosos, margen extendido, 9-nervados, 6 x 2.5 mm. **Pétalos** entreabiertos, angostamente elípticos, obtusos, margen extendido, 5-nervados, 5.5 x 1.7 mm. **Labelo** unido a la columna, entero, los lados involutos en posición natural, cordiforme, ápice redondeado, mucronado, tan suculento que se rompe al extenderse, 4.5 x 4.5 mm; ecalloso, con una quilla carnosa prominente al centro, ocultando la entrada al nectario. **Columna** recta, gruesa, corta, 3 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, bifurcada en el ápice, 4-locular. **Polinios** 4, obovoideos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** corto, apenas penetrando detrás del perianto, ámplio, no ornamentado. **Cápsula** subglobosa, sin cuellos, 6 x 3.5 mm.

Erect, much-branching epiphyte and terrestrial. **Roots** from the base only, thin, fleshy. The main **stem** is short but produces other main stems from the lower or middle internodes, secondary or flowering stems are produced from the upper internodes, and may produce successive new secondary stems from subapical internodes, stems sinuous. **Leaves** distributed the length of the stems; sheath rugose; blade narrowly oblong, unequally bilobed, those on the main stems larger than on secondary stems. **Inflorescences** from secondary stems, flowering only once, nutant, distichous; rachis zigzag. **Flowers** 2-4, successive, 2-3 open at a time, snow-white, apex of the sepals red to purple. **Sepals** partly spreading, ovate-lanceolate, obtuse to acute, fleshy, 9-veined. **Petals** narrowly elliptic, obtuse, 5-veined. **Lip** cordiform, apex rounded and mucronate; ecallose, with a prominent fleshy keel in the middle, blocking the entrance to the nectary. **Column** stout, straight. **Clinandrium** reduced. **Anther** bifurcate at the apex. **Pollinia** 4, obovoid. **Nectary** short, barely penetrating behind the perianth. **Capsule** subglobose, without any neck.

OTHER SPECIMENS: COSTA RICA: San José: Desamparados, *García-Cruz 936* AMO! INB! **Limón:** entre Ujarrás y San José Cabécar, *Fernández 680* AMO! Cerro Casma, *Grayum 10345* INB! Quebrada Kuisa, *Bittner 1804* INB! Valle de Silencio, *Davidse 28784* AMO! CR! SEL! **PANAMA: Chiriquí:** Cerro Hornito, *Dressler 5766* AMO! N. of Guadalupe, *Hágsater 6465* AMO! (illustration voucher, in part, flowers). Cerro Nubes y Cerro Pando, *G. Herrera 3425* INB!

DISTRIBUTION AND ECOLOGY: Along the summit of the Cordillera de Talamanca (Costa Rica) to Cerro Punta in Chiriquí (Panama) epiphytic and terrestrial in cloud forest and Páramo, 2100-2450 m altitude. Flowering throughout the year.

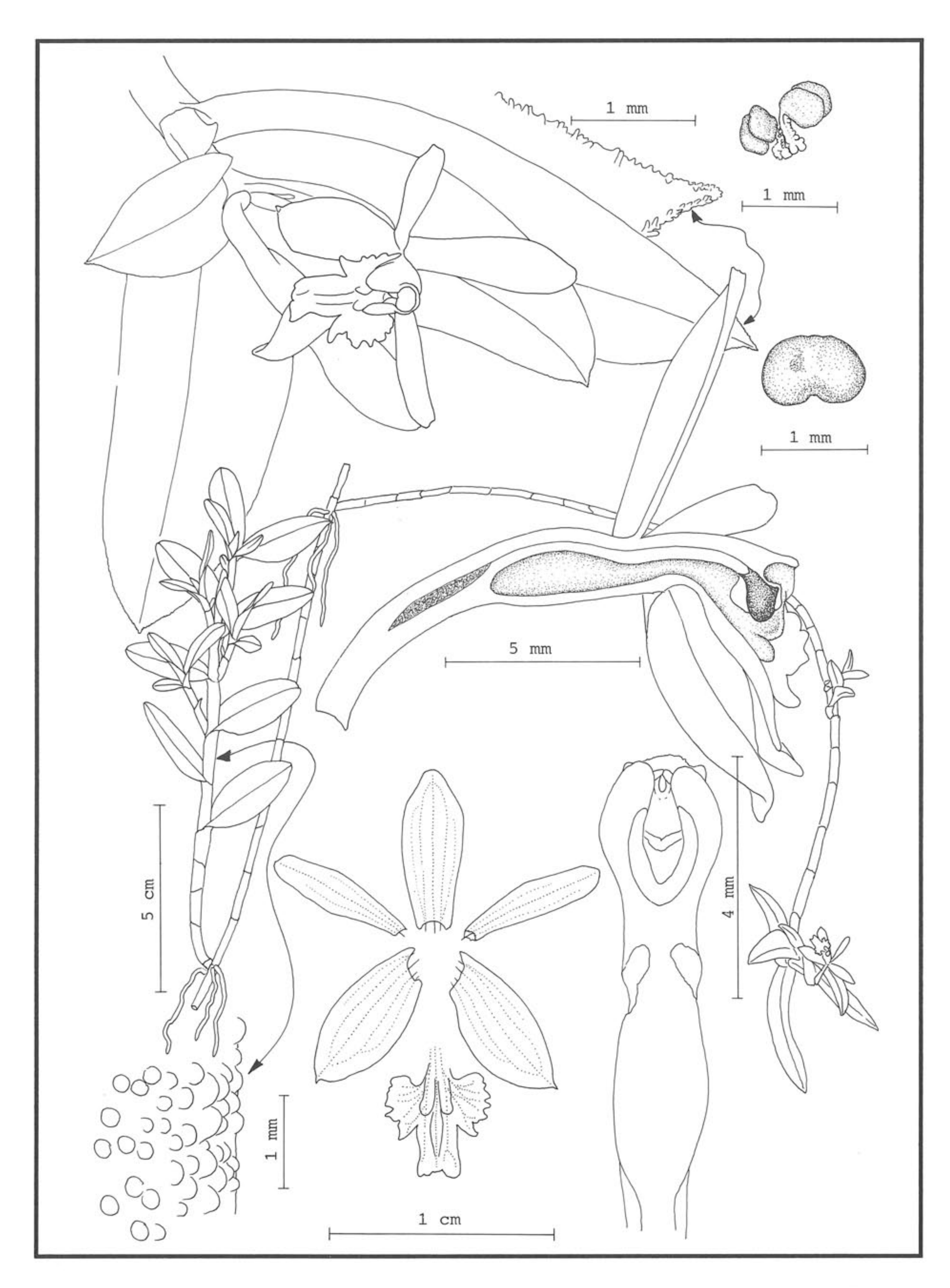
RECOGNITION: *Epidendrum erythrostigma* belongs to the *E. rugosum* group which can be recognized by the branching habit with few-flowered inflorescences from short, secondary stems, the leaf-sheaths rugose. The species is recognized by the snow-white flowers with the sepals tipped in red to purple, the cordiform lip with a high fleshy keel in the middle and the oblong petals.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*erythros*" red and "*stigma*" spot, in reference to the red spots on the apex of sepals.

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Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM FARALLONENSE Hágsater

Plate 332

EPIDENDRUM FARALLONENSE Hágsater, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca: Fila de la Cordillera Occidental, km 21 Cali-Buenaventura, arriba de Finca Torremolinos, 2000-2050 m, ***E. Hágsater 7307, R. L. Dressler & J. D. Folsom*** COL! (illustration voucher).

Epidendro lacerato C. Schweinf. simile sed lobulo medio labelli rectangulato emarginato, lobulorum lateralium amplitudine similare.

Hierba epífita, ramificada, erecta, 9-21 cm de largo. **Raíces** filiformes, de la base de la planta y la base de las plántulas cuando éstas se forman en las ramas, 1.3 mm de grosor. **Tallos** ramificados cerca del ápice, teretes, flexuosos, el basal 9-25 x 0.2-0.3 cm, los apicales 3-9 cm de largo; del tallo basal se producen 2-6 siendo más grandes los que están más cerca del ápice. **Hojas** 4-9, distribuidas a lo largo de todo el tallo, equidistantes, progresivamente más grandes; vaina tubular, terete, estriada y diminutamente verrugosa, 5-13 x 2-3 mm; lámina lanceolado-elíptica, obtusa, subcoriácea, margen diminutamente eroso-dentado, 16-32 x 5-11 mm. **Espata** ausente. **Inflorescencia** apical, sésil, racemosa. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 2-3.5 mm de largo. **Flores** 3-9, sucesivas, 2-3 abiertas a la vez, resupinadas, verdes. **Ovario** inflado ventralmente en la mitad apical formando un vesícula, 9-16 mm de largo. **Sépalo dorsal** extendido, obovado, redondeado, 5-nervado, 7-8.5 x 2.8 mm. **Sépalos laterales** elíptico-obovados, agudos, dorsalmente carinados hacia el ápice y aristados, 5-nervados, 7.3-8 x 3.1 mm. **Pétalos** extendidos, angostamente lanceolados, redondeados, margen entero, 3-nervados, 6.5-7.5 x 1.5 mm. **Labelo** unido a la columna, trilobado, 4.5-5 x 4-4.5 mm; bicalloso, los callos prominentes; unicarinado, la carina roma en la mitad basal del lóbulo medio; lóbulos laterales dolabriformes, margen profundamente lacerado-dentado, terminando hacia el ápice en un diente triangular, agudo, 1.5 x 2.8 mm; lóbulo medio subrectangular, emarginado, margen entero, 2.5 x 1.8 mm. **Columna** arqueada, dilatada hacia el ápice, 4-5 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas granulosas, del mismo largo de los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de la mitad de largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, dilatado, formando una vesícula prominente, no ornamentado. **Cápsula** no vista.

Erect, branching epiphyte. **Roots** basal, thin. **Stems** branching from near the apex, terete, flexuose. **Leaves** 4-9, distributed throughout the stem, progressively larger; sheath tubular, striate and minutely verrucose; blade articulate, lanceolate-elliptic, obtuse, subcoriaceous, margin minutely erose-denticulate. **Inflorescence** apical, sessile, racemose. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 3-9, successive, 2-3 open at one time, green. **Ovary** inflated, forming a prominent vesicle at the apical ventral half. **Dorsal sepal** obovate, apex rounded, 5-veined. **Lateral sepals** elliptic-obovate, acute, dorsally carinate, aristate, 5-veined. **Petals** narrowly lanceolate, rounded, 3-veined. **Lip** 3-lobed; bicallose; with a low central keel at the basal half of the midlobe; lateral lobes dolabriform, margin deeply lacerate-dentate, with a prominent triangular, acute tooth at the apex; midlobe subrectangular, apex emarginate. **Column** arched. **Clinandrium** short, entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granulose; viscidium semiliquid. **Nectary** penetrating nearly half of the ovary, dilated, forming a prominent ventral vesicle, unornamented.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Queremal, *Hágsater et al. 7239* AMES! AMO!

OTHER RECORDS: COLOMBIA: Valle del Cauca: El Saladito, *Ortiz s.n.* HPUJ (slide), AMO (slide duplicate)!

DISTRIBUTION AND ECOLOGY: Known only from the Cordillera Occidental, west of Cali, in cloud forest, at 1900-2050 m. Flowering in April and later.



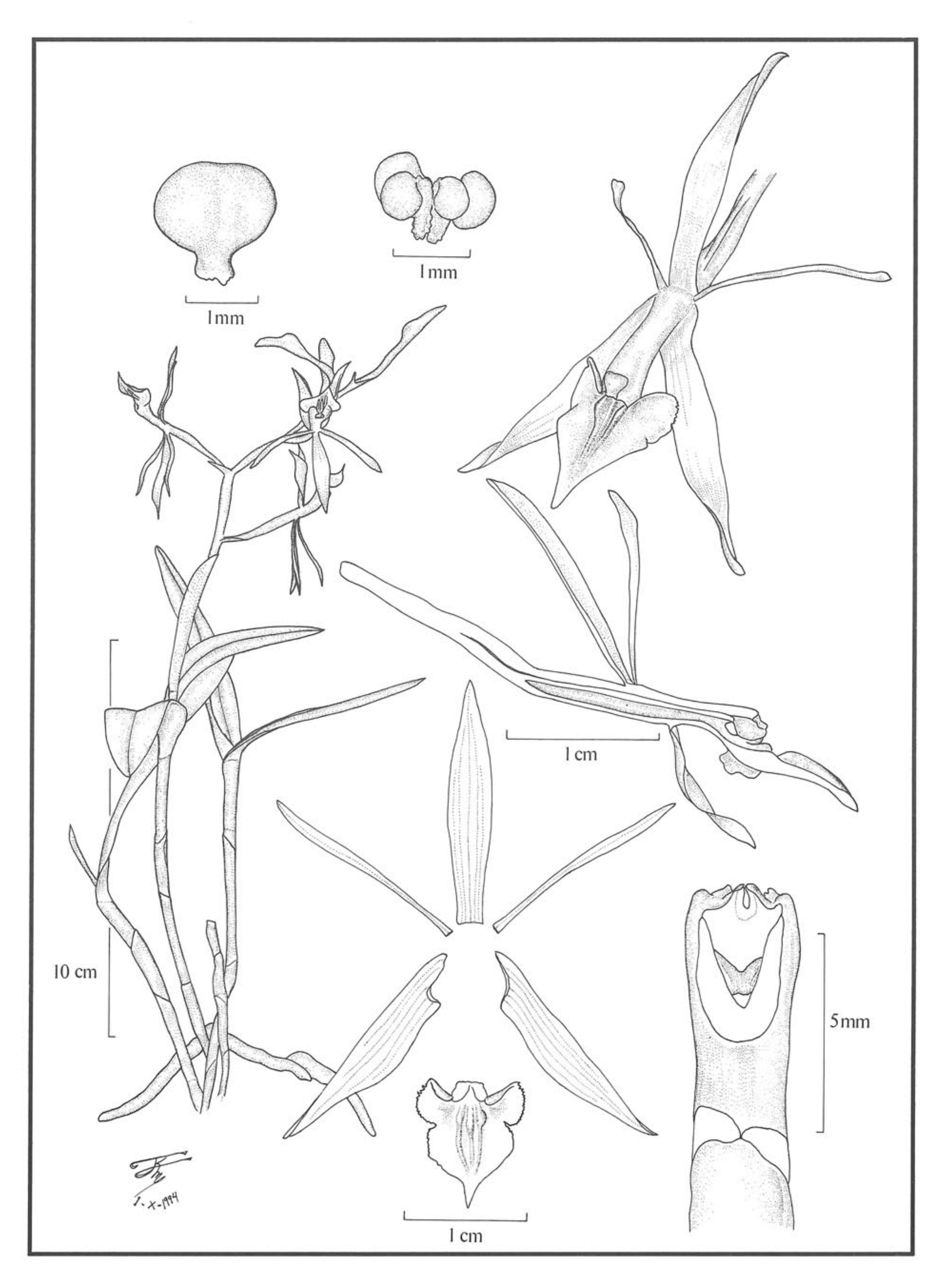
RECOGNITION: *Epidendrum farallonense* belongs to the *E. batesii* Dodson group, and can be distinguished by the green flowers, the 3-lobed lip, the lobes subequal in size, with the midlobe subrectangular and emarginate. *Epidendrum laceratum* also has a 3-lobed lip but the midlobe is triangular, acute. *Epidendrum batesii* Dodson has a 3-lobed lip with the midlobe much reduced, cuneate, 1-veined petals, the dorsal sepal being 17 mm long. *Epidendrum silverstonei* Hágsater has a deeply cordiform, orbicular, lacerate-dentate lip, 3-veined petals and 12.5 mm long sepals.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The name refers to the "Farallones de Cali", cliffs on the Cordillera Occidental west of Cali, where the species has been collected.

NOTE: The *E. batesii* group has a peculiar architecture in that the new stems produced from the apical half of the basal stem can be as long as the basal stem, and those closest to the apex are produced first, later but shorter stems being produced further down the basal stem.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM HERRENHUSANUM Hágsater

Plate 333

EPIDENDRUM HERRENHUSANUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: Cordillera Oriental de los Andes, between Bucaramanga and Pamplona, ca. 2500 m, col. 1981, hort. Herrenhäuser Gärten, Hannover, pressed 9 Nov. 1989, ***A. Herklotz 81/51*** AMO! (flowers in spirit and color slides; illustration voucher).

Epidendro revelo Hágsater & Dodson simile sed labello auriculiformi, lobulis lateralibus suborbicularibus, lobulo medio ovato acuminato.

Hierba epífita, cespitosa, ca. 20 cm de alto. **Raíces** basales, carnosas, 3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 6-8 x 0.3 cm. **Hojas** 2, agregadas en el ápice del tallo, subcoriáceas; vaina tubular, lisa, lateralmente comprimida, ca. 2 cm de largo; lámina articulada, angostamente elíptica a lanceolada, aguda, margen entero, lisa, verde, 5-8 x 1.5-2 cm. **Espata** 1, conduplicada, obtusa, 4 cm de largo. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, racemosa, erecta, 9 cm de largo; raquis lateralmente comprimido. **Brácteas florales** mucho más cortas que el ovario, triangular-acuminadas, 4-5 mm de largo. **Flores** 6, sucesivas, varias abiertas a la vez, no resupinadas, amarillentas, bronceadas exteriormente, columna verde, fragancia no registrada. **Ovario** terete, ligeramente inflado en la mitad apical, 20-24 mm de largo. **Sépalo dorsal** algo reflexo, libre, angostamente elíptico, acuminado, membranáceo, margen extendido, 5-nervado, 20 x 3 mm. **Sépalos laterales** extendidos, libres, angostamente lanceolados, acuminados y oblícuos, membranáceos, margen extendido, 5-nervados, 20 x 4 mm. **Pétalos** extendidos, lineares, ligeramente ensachados en la mitad apical, agudos, margen extendido, membranáceos, 1-nervados, 17 x 1 mm. **Labelo** unido a la columna, trilobado, auriculiforme en forma general, cordado en la base, 10-11 x 8-9 mm; bicalloso, callos laminares, prolongándose en las carinas laterales; tricarinado, las carinas prominentes, romas, la central partiendo de entre los callos; lóbulos laterales suborbiculares, margen dentado, senos angostos; lóbulo medio ovado-acuminado, margen dentado hacia la base, 8 x 7 mm. **Columna** recta, delgada, 8 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, con un apéndice membranáceo, el apéndice con margen eroso en el ápice, 4-locular. **Polinios** 4, subglobosos, algo lateralmente comprimidos; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** hendido, apical. **Lóbulos laterales del estigma** prominentes, de alrededor de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando casi 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** erect, simple, laterally compressed. **Leaves** 2, narrowly elliptic to lanceolate, acute, at the apex of the stem. **Spathe** 1, conduplicate, obtuse. **Inflorescence** apical, erect, racemose, flowers only once. **Floral bracts** triangular-acuminate, much shorter than the ovary. **Flowers** 6, successive, several open at once, non-resupinate, yellowish, bronzy, the column green. **Ovary** somewhat thickened in the apical half. **Dorsal sepal** somewhat reflexed, narrowly elliptic, acuminate, 5-veined. **Lateral sepals** spreading, narrowly lanceolate, acuminate, oblique, 5-veined. **Petals** spreading, linear, apex acute, 1-veined. **Lip** united to the column, trilobed, auriculiform in general shape, base cordate; bicallose, with 3 low keels running down the center, the middle keel starting between the callus; lateral lobes suborbicular, sinuses, acute; midlobe ovate-acuminate, margin denticulate near the base. **Column** thin. **Clinandrium** reduced. **Anther** subspherical, with an apical erose appendage, 4-celled. **Pollinia** 4, subglobose, somewhat flattened; caudicles granulose, viscidium semiliquid. **Rostellum** slit. **Nectary** penetrating 1/2 of the ovary, unornamented. **Capsule** not seen.

OTHER RECORDS: COLOMBIA: Antioquia: Pass between Urrao and Carmen de Atrato, *Luer 17650* AMO! (flower in spirit).

DISTRIBUTION AND ECOLOGY: Known only from two collections on the eastern and western cordilleras of the Andes on the borders of the departments of Santander and Norte de Santander, not far from the border of Venezuela, and Antioquia at 2500-2700 m altitude. Flowering in November.

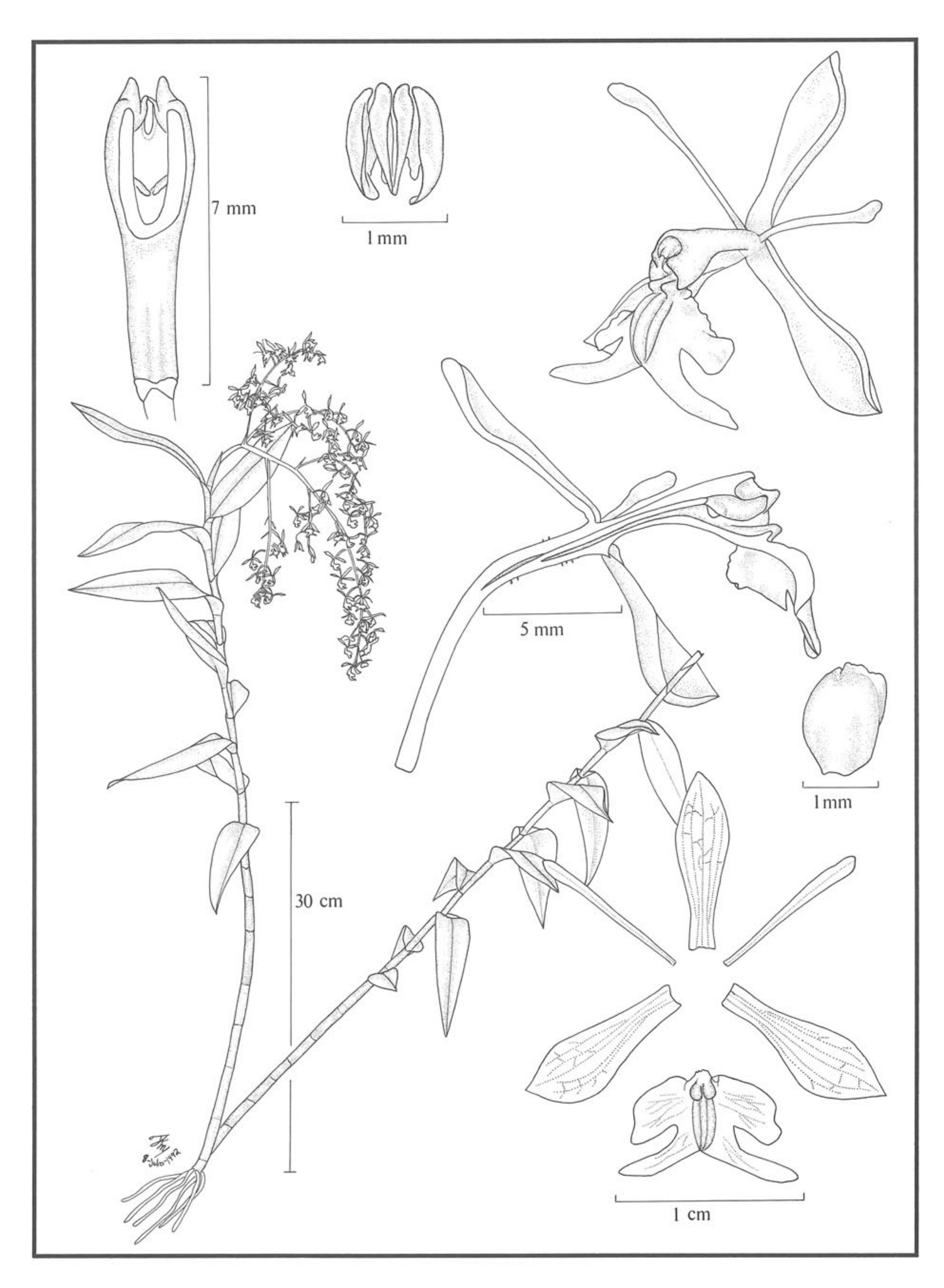
5

RECOGNITION: *Epidendrum herrenhusanum* is closely related to *E. reveloi,* both having apical, erect, racemose infloresences with spathe, and non-resupinate flowers, but this species can be distinguished by the auriculiform lip with suborbicular lateral lobes separated from the midlobe by narrow sinuses and a ovate-acuminate midlobe. The latter species has an entire lip.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The species is named after the famous Herrenhäuser Gardens of the City of Hanover, Germany. The gardens were established in the 17th century and are reknowned for the numerous species described from plants grown there. I am indebted to Mr. Rudolf Jenny of Switzerland, who sent material received from Dr. Preissel, Director of the Herrenhäuser Gärten.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM HORICHII Hágsater

Plate 334

EPIDENDRUM HORICHII Hágsater, *sp. nov.*

Holotype: COSTA RICA: Alajuela/Heredia: Rt. 9 abajo de Varablanca, 1500-2100 m, col. 19 Mar. 1982, pressed 10 Jul. 1992, ***E. Hágsater 6834, C. Kl. Horich, R. L. Dressler, W. & B. Thurston*** AMO! (illustration voucher). Clonotypes: 6 Jun. 1983 K! 1 Aug. 1989 AMES! CR! SEL! 7 Jul. 1991 MO!

Epidendro pilifero Reichb. f. simile sed habitu minus robusto, floribus minoribus, labello immaculato vel interdum macula solida rosea pallida in disco ferenti.

Hierba epífita, cespitosa, 55-75 cm de alto. **Raíces** basales, carnosas, ca. 2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 45-60 x 0.4-0.9 cm. **Hojas** 9-11, distribuidas en la mitad apical del tallo, gramíneas, subcoriáceas; vaina tubular, lisa, ca. 5 cm de largo; lámina elíptica a lanceolada, aguda a acuminada, margen entero, lisa, nervaduras resaltadas en el haz, verde, 8-15 x 2.6-4.4 cm. **Espata** ausente. **Inflorescencia** terminal, del tallo maduro, florece una sola vez, paniculada, suberecta a arqueada, 12-25 cm de largo; pedúnculo ligeramente lateralmente comprimido; ocasionalmente con dos brácteas basales, acuminadas, ca. 3 cm de largo. **Brácteas florales** desde más largas que el ovario hasta mucho más cortas, triangulares, acuminadas, 2-22 mm de largo. **Flores** 20-60, simultáneas, resupinadas, sépalos, pétalos y mitad basal de la columna verde, mitad apical de la columna y labelo blanco inmaculado o en ocasiones con una mancha sólida rosa pálido en el disco, aparentemente sin fragancia. **Ovario** no inflado, terete, escasa y finamente furfuráceo, ca. 15 mm de largo. **Sépalos** extendidos, libres, sin quilla dorsal, no ornamentados, carnosos, angostamente espatulado-oblanceolados, agudos, margen extendido, 3-nervados, con 2 nervios secundarios, 9 x 2.5-3 mm. **Pétalos** extendidos, filiformes, ligeramente ensanchándose hacia el ápice, obtusos, membranáceos, margen extendido, 1-nervados, 8.5 x 0.6 mm. **Labelo** unido a la columna, ampliamente cuneado en la base, trilobado, más ancho entre los lóbulos apicales que entre los basales, 5 x10 mm; bicalloso, los callos tuberculosos, paralelos; con 3 carinas centrales prominentes, romas, la central llegando hasta el seno apical; lóbulos laterales oblicuamente subcuadrados, margen entero; lóbulo medio bilobado, los lóbulos fuertemente divaricados, angostamente subrectangulares, obtusos. **Columna** recta, delgada, 7 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente lateralmente comprimidos, los interiores ligeramente más pequeños, transparentes; caudículas suaves y lisas, ligeramente más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando 1/5 del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose **herb**. **Roots** basal, fleshy. **Stems** reed-like, terete, straight. **Leaves** distributed along the apical half of the stem; sheath tubular, smooth; blade elliptic to lanceolate, acute to acuminate, margin entire. **Inflorescence** apical, from the mature stem, paniculate, suberect to arcuate; peduncle sometimes with two large acuminate bracts. **Floral bracts** longer to much shorter than the ovary, triangular, acuminate. **Flowers** simultaneous, resupinate, sepals, petals and base of column green, apex of column and lip white, immaculate, or sometimes with a solid light pink blotch on the disc. **Ovary** slender, not inflated, finely and very sparsely furfuraceous. **Sepals** spreading, free, narrowly spathulate-oblanceolate, acute, fleshy, unornamented, 3-veined, with 2 secondary veins. **Petals** spreading, filiform, obtuse, 1-veined. **Lip** united to the column, trilobed, wider between the apical lobes than between the basal lobes, base widely cuneate; bicallose; 3-keeled, the central keel running down to the emarginate apex; lateral lobes obliquely subquadrate, margin entire; midlobe bilobed, lobes narrowly subrectangular, strongly divaricate. **Column** straight, slender. **Clinandrium** reduced, entire. **Pollinia** 4, bird-wing type, strongly laterally compressed, the inside pair somewhat smaller, transparent. **Nectary** penetrating 1/5 of the ovary.

OTHER SPECIMENS: COSTA RICA: Heredia: Varablanca, *Hágsater 6818* AMO! ENCB! F! G! INB! K! MICH! NY! P! PMA! USJ! Porrosatí, *León 4* F! Varablanca, *Valerio 359* CR! **San José:** Monte de la Cruz, *Horich* UC! **Cartago:** Coliblanco, *Maas 1138* U!

DISTRIBUTION AND ECOLOGY: Endemic to central Costa Rica, in the upper Atlantic slope and central valley of the Cordillera Central. Epiphytic, in evergreen, wet cloud forest at about 1800-2000 m altitude. Flowering in June-August.

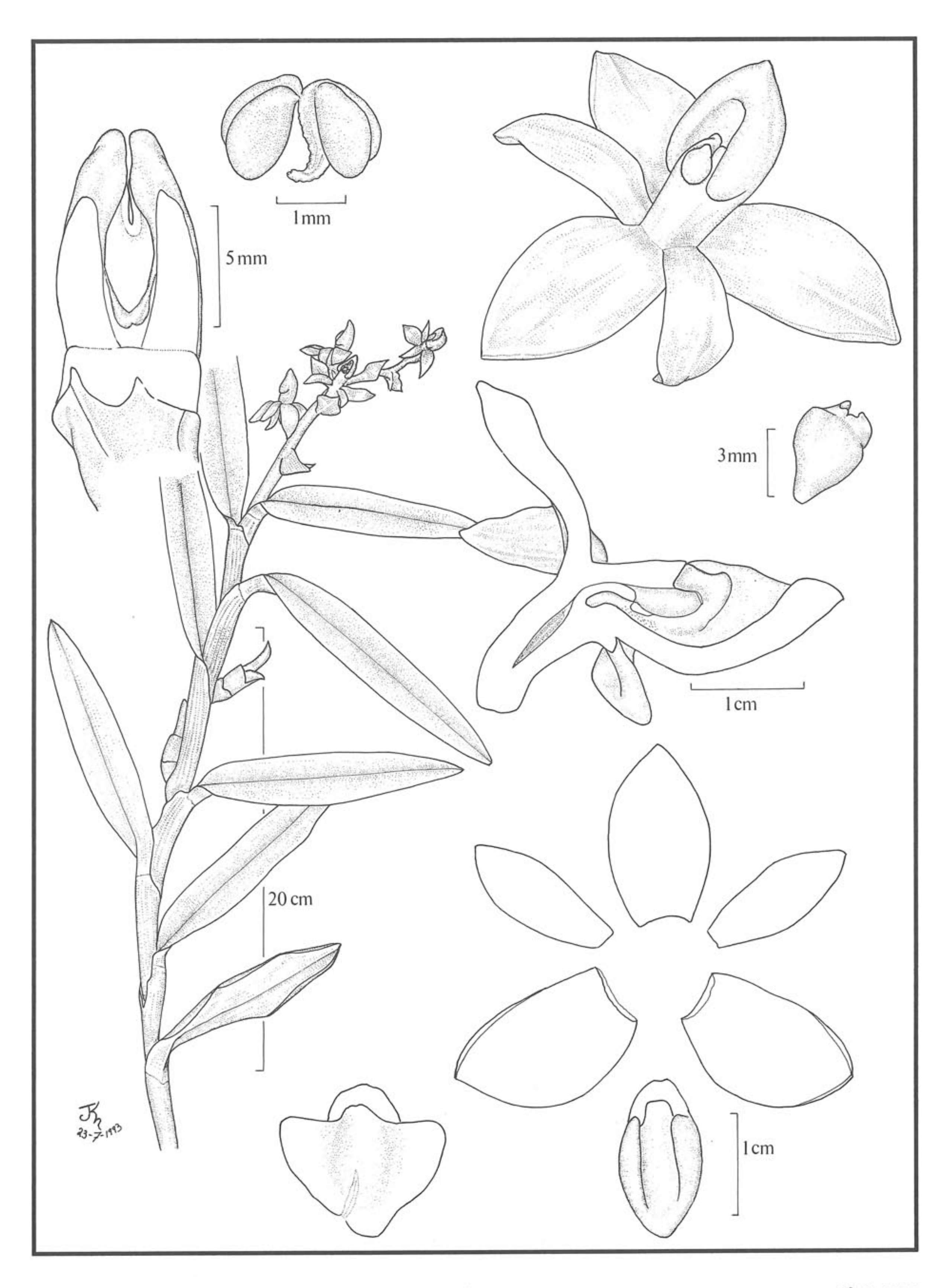
RECOGNITION: *Epidendrum horichii* is recognized by its simultaneous green and white flowers, immaculate or sometimes with a solid, light pink blotch on the disc, lip wider across the apical lobes than across the basal lobes, which are obliquely subquadrate, the sepals 9 mm long. *Epidendrum subnutans* Ames & C. Schweinf. has smaller, successive, flowers (sepals 4.5-6.1 mm). *Epidendrum longibracteatum* Hágsater, has still smaller flowers (sepals 3.4-5.0 mm) and the floral bracts are much longer than the ovaries. *Epidendrum piliferum* has simultaneous, larger flowers (sepals 13-14 mm), disc dotted with deep purple.

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CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named in honor of Clarence K. Horich, a well known collector of plants in San José, Costa Rica, and who accompanied and guided many orchid specialists in the course of the years.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM HUMEADORENSE Hágsater & Dodson

Plate 335

EPIDENDRUM HUMEADORENSE Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Carchi: Municipio Tulcán, km 18 de Maldonado hacia Tulcán, pasando la cascada "La Humeadora", abajo de El Laurel, 2295 m, O°53' N 78°W, 30 Apr. 1993, ***E. Hágsater 11289, C. Dodson, N. Williams, M. Whitten, A. Embree, F. Stevenson & R. Chandler*** QCNE! (illustration voucher). Isotypes: AMO! COL! MO!

Epidendro macrostachyo Lindl. simile sed floribus majoribus, sepalis ovatis obtusis, interne paulo carinatis, petalis ellipticis, labello triangulari.

Hierba terrestre, cespitosa, ca. 150 cm de alto. **Raíces** carnosas, de la base del tallo principal, ca. 2.5 mm de grosor. **Tallos** erectos, ramificados cuando maduros, tipo caña, teretes, ca. 60 x 1 cm, las ramas ca. 19-20 x 0.7-1.0 cm. **Hojas** numerosas, distribuidas a lo largo de todo el tallo, las basales caedizas, en las ramas generalmente 5-6, la primera y la última más cortas que las centrales; vaina tubular, finamente rugosa, estriada, ca. 6 cm de largo; lámina angostamente elíptico-lanceolada, aguda, margen finamente eroso-denticulado, 8.5-14 x 1.9-2.5 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro o de las ramificaciones, florece una sola vez, racemosa, erecta, flexuosa, 8-13 cm de largo. **Brácteas florales** más cortas o iguales al largo del ovario, progresivamente más cortas hacia el ápice, cuculadas, ovadas, algo carinadas hacia el ápice, obtusas, margen ondulado, finamente eroso, 7-17 x 8-14 mm. **Flores** 5-7, no resupinadas, simultáneas, carnosas, con pocos cristales al secarse o ponerse en FAA, verde amarillentas, fragancia a jazmín y geraniol. **Ovario** no inflado, terete, no ornamentado, 7-15 mm de largo. **Sépalos** extendidos, reflexos hacia la mitad apical, carnosos, glabros, elípticos, obtusos, con una quilla roma hacia el ápice, 12-20 x 7-12.5 mm; los **laterales** oblicuos. **Pétalos** recurvados, elípticos, obtusos, con una quilla roma hacia el ápice, carnosos, 11-18 x 3.5-6.5 mm. **Labelo** unido a la columna, entero, anchamente triangular, obtuso, muy carnoso, no se puede extender una vez rehidratado sin romperlo, en posición natural los lados abrazando el ápice de la columna, 9-13 x 12-18 mm; ecalloso; sin quillas. **Columna** recta, gruesa, 9-12 mm de largo, el ápice con un diente a cada lado, grueso y algo recurvado hacia arriba. **Clinandrio** reducido, entero. **Antera** ovoide, aguda, carnosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** apenas penetrando hasta el perianto, ornamentado con escasa pubescencia frente al estigma. **Cápsula** no vista.

Terrestrial caespitose **herb**. **Stems** erect, branching with age. **Leaves** narrowly elliptic-lanceolate, acute, margin finely erose-denticulate. **Inflorescence** apical, racemose. **Floral bracts** smaller or equal to the ovary, progressively shorter, ovate, margin undulate, finely erose. **Flowers** 5-7, non-resupinate, simultaneous, yellowish green. **Sepals** elliptic, obtuse, fleshy, with a low rounded ridge in the apex. **Petals** reflexed, elliptic, obtuse. **Lip** entire, widely triangular, embracing the column; ecallose. **Column** straight, thick, with an apical up-turned tooth on each side. **Anther** ovoid, acute, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose. **Rostellum** subapical, slit. **Nectary** not penetrating beyond the perianth, ornamented with scarce pubescence opposite the stigmatic cavity.

OTHER SPECIMENS: ECUADOR: Carchi: Tulcán-Maldonado, *Hirtz et al. 5632* RPSC!

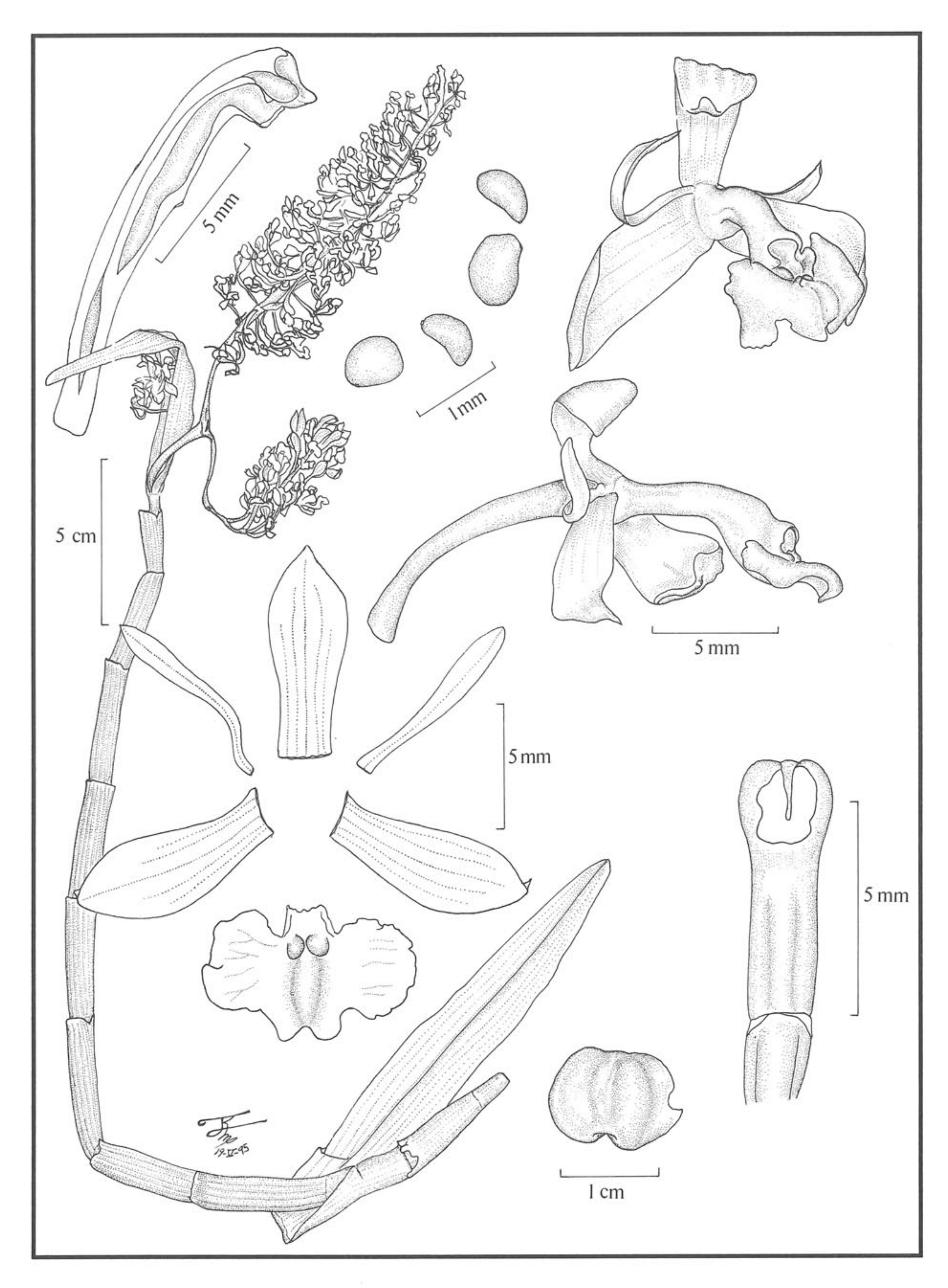
DISTRIBUTION AND ECOLOGY: Known only from the border between Ecuador and Colombia, on the western slopes of the Andes, terrestrial amongst other shrubs in montane and cloud forest, at around 2300 m altitude. Flowering in April and May.

RECOGNITION: *Epidendrum humeadorense* is closely related to *E. macrostachyum*, but is recognized by its 5-7, simultaneous, yellow-green flowers, floral scent of jasmin-geraniol, the segments wide with a low rounded apical keel in front, sepals twice as wide as the petals, the lip triangular. *Epidendrum palaciosii* Hágsater & Dodson has flowers about one-third the size, the sepals muricate outside, not keeled. *Epidendrum dermatanthum* Kraenzl. has petals nearly as wide as the sepals. *Epidendrum coordinatum* Rchb. f. has carinate, acute sepals, but the apex of the column has dolabriform wings. *Epidendrum macrostachyum* has filiform petals and a cordate lip. *Epidendrum oxycalyx* Hágsater & Dodson has acuminate sepals and petals, and a cordiform-triangular lip.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to "La Humeadora" (Smoky), the high, thin, waterfall on the road from Tulcán to Maldonado, near where the type was collected.



EPIDENDRUM HUTCHINSONII Hágsater

Plate 336

EPIDENDRUM HUTCHISONII Hágsater, *sp. nov.*

Holotype: PERU: Amazonas: Chachapoyas: Cerros Calla Calla, 21 km above Leimebamba on road to Balsas, 3150 m, 7 Apr. 1964, ***P. C. Hutchison et al. 4936*** AMES! Isotypes: F, NY! UC, USM.

Epidendro baezense Hágsater & Dodson simile sed labello trilobo, sepalis incurvis, inflorescentia pluriflora compacta, paniculata, ramis lateralis brevibus.

Hierba epífita, cespitosa, ca. 40 cm o más de alto. **Tallos** sencillos, tipo caña, teretes, rectos, 38 x 0.3-1 cm. **Hojas** más de 10, distribuidas a lo largo del tallo; vaina tubular, ligeramente estriada, hasta de 5.5 cm de largo; lámina articulada, angostamente lanceolada, obtusa, margen apical eroso, subcoriácea, lisa, 13-17.5 x 1.6-2.2 cm. **Espatas** 1-2, prominentes, agudas, tubulares en la base, abiertas arriba, 6.5-10 x 0.8-1 cm. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, paniculada, con 1-2 pequeños racimos cortos cerca de la base, arqueada, 14-22 cm de largo, formando racimos compactos de no más de 5 cm de diámetro, racimo principal 12-15 cm de largo, racimos laterales 3-6 cm de largo; raquis terete, no ornamentado. **Brácteas florales** muy cortas, filiformes, 2-6 x 0.4 mm. **Flores** ca. 50-70, resupinadas, simultáneas, coloración y fragancia no registradas. **Ovario** terete, no inflado, no ornamentado, 9-15 mm de largo. **Sépalos** extendidos, libres, quilla dorsal inconspícua en los laterales, glabros, subcarnosos, 5-nervados, 7 x 2.5 mm; el **dorsal** subespatulado, redondeado, margen extendido; los **laterales** oblanceolados, aristados, oblicuos, margen extendido. **Pétalos** extendidos, angostamente oblanceolados, obtusos, margen extendido, membranáceos, 1-nervados, 7 x 0.9 mm. **Labelo** unido a la columna, trilobado, cordado, margen eroso, subcarnoso, 4.5 x 7 mm; bicalloso, los callos subglobosos; unicarinado, la carina roma; lóbulos laterales semiorbiculares, erosos; lóbulo medio más pequeño, transversal, con un seno apical amplio, formado por 2 lóbulos redondeados. **Columna** arqueada, el ápice jorobado, delgada, 6 mm de largo. **Clinandrio** corto, entero. **Antera** subreniforme, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, los interiores más pequeños. **Rostelo** subapical, hendido. **Nectario** penetrando menos de 1/4 parte del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** reed-like, terete, straight. **Leaves** distributed throughout the stems; blade narrowly lanceolate, obtuse, subcoriaceous. **Spathes** 1-2, prominent, tubular at the base, open above, acute. **Inflorescence** apical, paniculate, racemes very compact, the laterals short. **Flowers** simultaneous, resupinate. **Sepals** subspatulate to oblanceolate, somewhat fleshy, 5-veined; the **laterals** aristate. **Petals** narrowly oblanceolate, obtuse, 1-veined. **Lip** cordate, 3-lobed; bicallose, callus subglobose; with a low, rounded keel running down the center; lateral lobes semiorbicular, erose; midlobe transverse, emarginate, forming two rounded lobes. **Column** arched, the apex hunched, slender. **Clinandrium** short, entire. **Anther** subreniform, unornamented, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** apical, slit. **Nectary** penetrating less than 1/4 of the ovary, unornamented.

OTHER SPECIMENS: PERU: Without locality, *Sénege s.n.* P! (illustration voucher).

DISTRIBUTION AND ECOLOGY: Known only from Peru, from the Province of Chachapoyas, at about 3150 m altitude.

RECOGNITION: *Epidendrum hutchisonii* is closely related to *E. baezense*, but is recognized by the deeply 3-lobed lip, which is considerably wider than long, the arched column which is apically hunched, and the very compact inflorescence, with short lateral racemes near the base. *E. baezense* has the lip about as wide as it is long, the column not hunched, the racemes are not particularly compact. *E. excisum* Lindl. has strap-like, bilobed leaves and wide, rounded spathes. *Epidendrum modestum* Rchb. f., is very similar, but its more numerous racemes are more lax-flowered and subequal in length. *Epidendrum utcuyacuense* Hágsater is also quite similar but has the midlobe of the lip longer than broad, a much smaller spathe and the inflorescence is simple and lax-flowered.

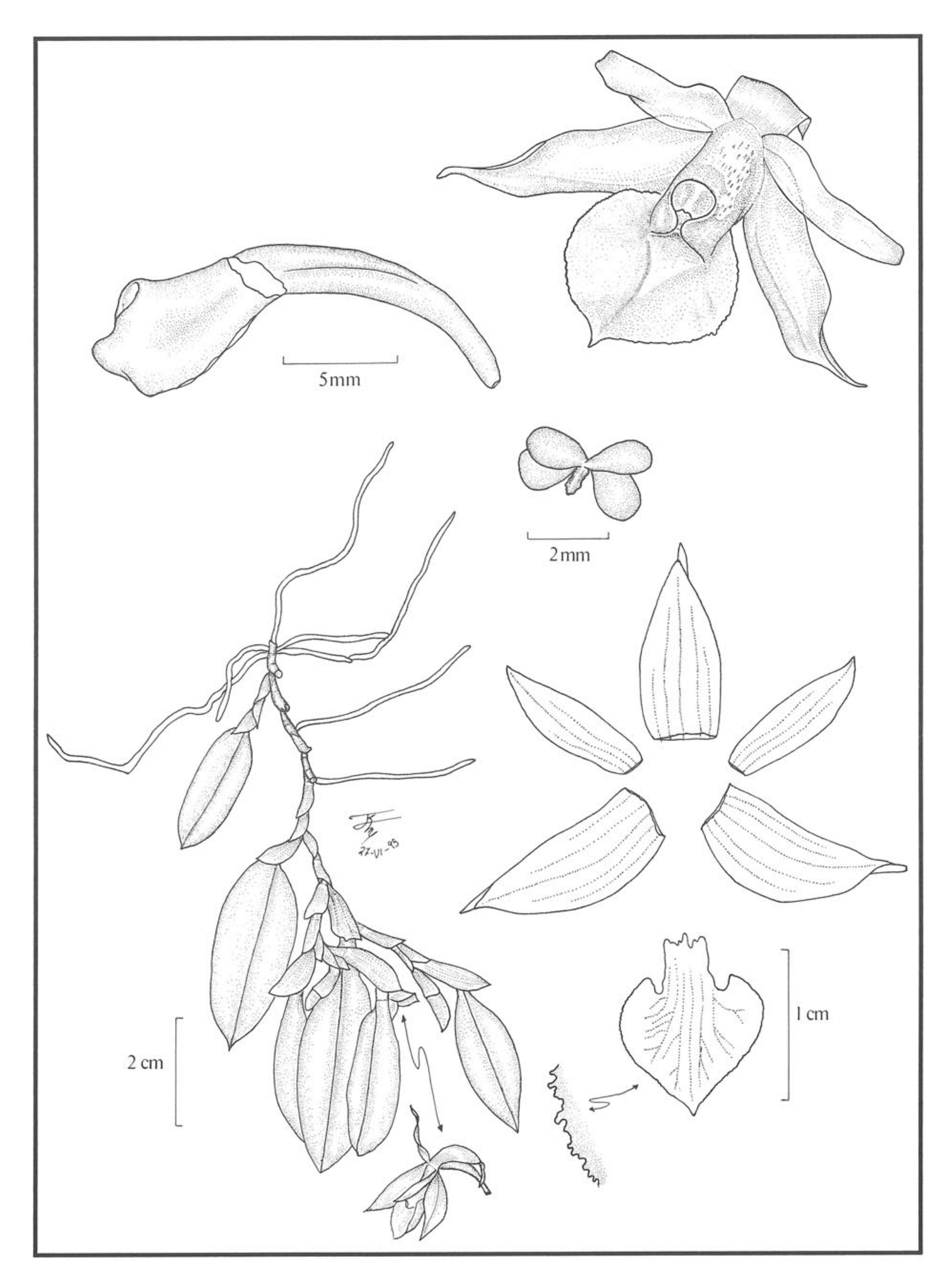
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CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: In honor of Paul C. Hutchison who directed the botanical expedition to the Andes in 1963-64 during which this species was collected. His collections are located mainly at UC and USM, with duplicates at AMES, NY and numerous other herbaria.

NOTE: Collecting or other notes of M. Vidal Sénege have not been located in Paris. The Hutchison specimens bear little information.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ILINIZAE Hágsater & Dodson

Plate 337

EPIDENDRUM ILINIZAE Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Cotopaxi, West Mt. Iliniza, 3000 m, 20 Oct. 1984, ***A. Hirtz 2037*** RPSC 102! (illustration voucher).

Epidendro garayi Løjtnant simile sed folio apicali unico, nodorum vaginibus parvis conduplicatis 5-16 mm longis, folio oblongo 1.2-1.6 cm lato, labello ad basim profunde cordato, apice acuminato, margine minute eroso.

Hierba epífita, colgante, 10 cm de largo o más. **Raíces** escasas, filiformes, 2 mm de grosor. **Tallo** colgante, terete, 10-30 mm de largo, algo engrosado, constituido por 4 entrenudos, uno corto y tres largos, los tallos nuevos son producidos del nudo apical del tallo anterior; cubiertos por vainas rígidas, originándose una de cada nudo, ovadas, obtusas, conduplicadas, 5-16 x 3-8 mm. **Hojas** 1, apical, oblongo-elíptica, aguda, dorsalmente quillada, coriácea, margen algo revoluto, 3-4 x 1.2-1.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, racemosa, muy corta; con 3 brácteas anchas. **Flor** 1, resupinada, roja, fragancia no registrada. **Ovario** terete, no inflado, 12 mm largo. **Sépalos** extendidos, carnosos, ovados, agudos, quilla dorsal prominente, sobresaliendo en el ápice, 5-nervados; el **dorsal** 10 x 5 mm; los **laterales** oblicuos, acuminados, 13 x 6.5 mm. **Pétalos** extendidos, lanceolados, agudos, ligeramente oblicuos, carnosos, 3-nervados, 11 x 3.4 mm. **Labelo** unido a la columna, entero, base profundamente cordada, cordiforme, agudo, carnoso, margen finamente eroso, 9 x 9-5 mm; ecalloso; sin carinas. **Columna** recta, corta, gruesa, termina en un par de lóbulos redondeados que casi se tocan frente a la antera, 7 mm de largo. **Clinandrio** reducido, entero. **Antera** no vista. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más cortas que los polinios. **Rostelo** apical, hendido. **Cápsula** no vista.

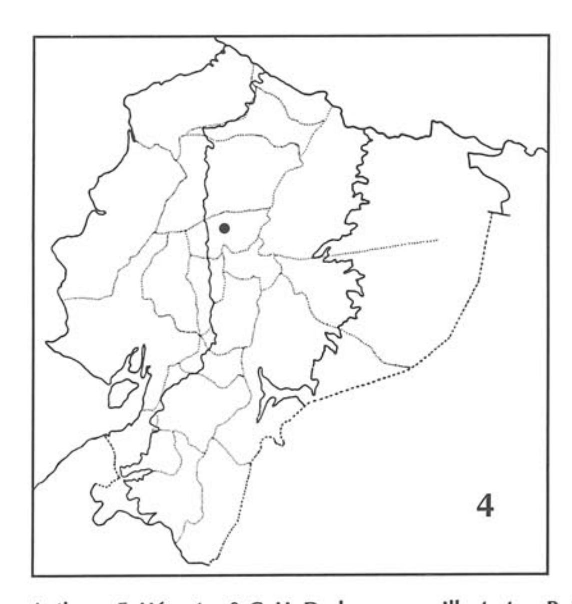
Pendent epiphyte. **Stem** terete, formed by 4 internodes, new stem originating from the apical internode of the previous stem, each node of the stem with an ovate, conduplicate, short, bladeless sheath. **Leaf** 1, apical, oblong-elliptic, acute. **Inflorescence** apical, racemose. **Flower** resupinate, red. **Sepals** ovate, acute, 5-veined; the **laterals** oblique, acuminate. **Petals** lanceolate, acute, 3-veined. **Lip** united to the column, entire, cordiform, fleshy, base deeply cordate, acute, margin finely erose; ecallose. **Column** straight. **Clinandrium** reduced. **Rostellum** apical, slit.

DISTRIBUTION AND ECOLOGY: Known only from the type locality, but suspected to exist in similar habitats. On trees in tall, wet cloud forest at 3000 m altitude. Flowering in October.

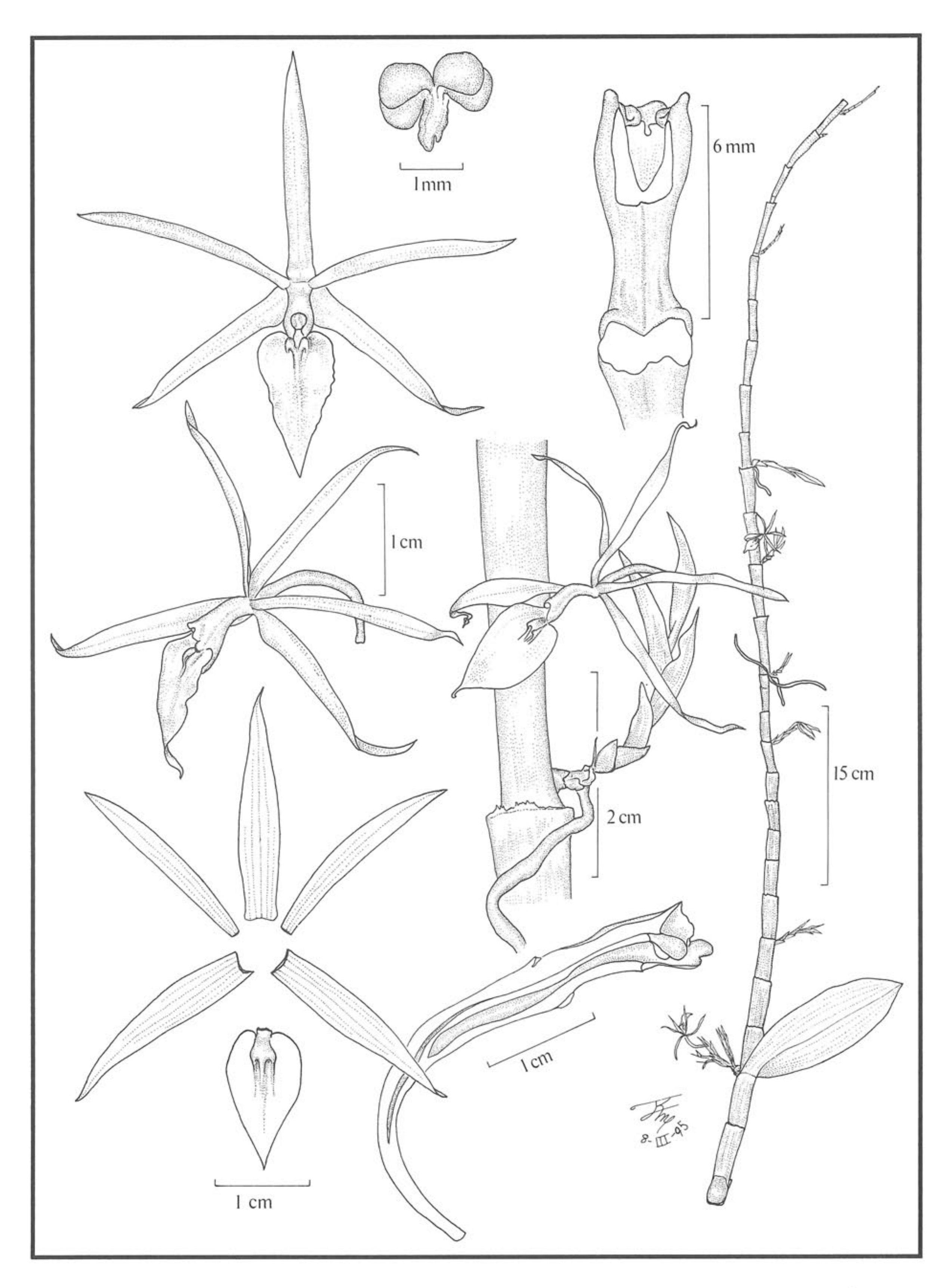
RECOGNITION: *Epidendrum ilinizae* is closely related to *E. garayi* and *E. carmelense* Hágsater & Dodson. It is recognized by its pendent plants with short somewhat thickened stems, broad, acute leaves, and red flowers. *Epidendrum carmelense* and *E. ilinizae* have a single, leaf at the apex of the stem, which is covered by sheaths which are quite distinct from the apical leaf, while in *E. garayi* the sheaths bear leaf blades identical to the apical leaves. These species have been incorrectly described as having a lateral inflorescence, due to a misinterpretation of the growth mode.

CONSERVATION STATUS: Vulnerable. The forests where this species grows, although at a quite high altitude just below the paramo, are being cut for lumber and agriculture, and form an endangered life-zone in Ecuador.

ETYMOLOGY: In reference to Mount Iliniza, where the type was collected.



Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM INGRAMII Hágsater & García-Cruz

Plate 338

EPIDENDRUM INGRAMII Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Puntarenas; Monteverde Reserve, 2 km SW Station, 10°18'N 84°48'W, in leeward cloud forest, 1500-1550 m, 30 Jul. 1992, ***S. Ingram 1593 & K. Ferrell-Ingram*** AMO! (illustration voucher).

Epidendro albertii Schltr. simile sed inflorescentiis terminalibus et lateralibus racemosis, floribus successivis albis, bracteis magnis acuminatis imbricatis, labello cordiformi acuminato, recedit.

Hierba epífita, cespitosa, ca. 90 cm de alto. **Raíces** basales, en ocasiones de la base de las inflorescencias laterales, carnosas. **Tallos** sencillos, erectos, lateralmente comprimidos, ca. 90 cm de alto. **Hojas** distribuidas a lo largo del tallo; vaina tubular, ancipitosa, estriada, 2.5-4 x 0.5-1.5 cm; lámina elíptica, aguda, hasta 15 x 5 cm. **Espata** ausente. **Inflorescencia** apical y lateral de los entrenudos, cerca de la base de la vaina, aparece opuesta a la hoja inmediata inferior, racemosa, floreciendo con nuevos racimos del mismo lugar durante varias temporadas; pedúnculo corto, 2-3 cm de largo, totalmente cubierto por 3-6 brácteas obtusas a agudas, imbricadas, la basal de ca. 3 mm de largo, progresivamente más largas y acuminadas, hasta 25 mm de largo. En ocasiones se producen nuevas plántulas de las inflorescencias viejas. **Brácteas florales** ovado-acuminadas, conduplicadas, imbricadas, agudas, 2-2.5 cm de largo. **Flores** sucesivas, se desarrollan una a una, resupinadas, blancas a blanco-verdoso, fragancia no registrada. **Ovario** algo dilatado en la mitad apical, l2-17 mm de largo. **Sépalos** linear-lanceolados, acuminados, 5-nervados, 25 x 4.5-5 mm; los **laterales** algo oblicuos. **Pétalos** linear-lanceolados, acuminados, ligeramente arqueados, 3-nervados, 22 x 2.5 mm. **Labelo** unido a la columna, entero, cordiforme, acuminado, margen entero, 13-15 x 8 mm; callo tridentado, hueco entre las quillas; tricarinado, la carina central prolongándose hasta la mitad de la labelo, las laterales cortas, poco prominentes. **Columna** recta, delgada, 6.5 mm de largo. **Clinandrio** reducido, eroso. **Antera** ovoide, 4-locular. **Polinios** 4, subglobosos, subiguales; caudículas ligeramente más largas que los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de la mitad del largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose, epiphyte. **Stems** erect, laterally compressed. **Leaves** elliptic, acute. **Inflorescence** apical and lateral from the internode near the base of the leaf-sheath, racemose, producing new racemes over successive seasons; peduncle short, completely covered by imbricate bracts, progressively longer and acuminate, the basal short and obtuse to acute. **Floral bracts** ovate-acuminate, conduplicate. **Flowers** successive, developing one by one, resupinate, white to greenish white. **Ovary** slightly inflated above the middle. **Sepals** linear-lanceolate, acuminate, 5-veined; **laterals** somewhat oblique. **Petals** linear-lanceolate, acuminate, slightly arcuate, 3-veined. **Lip** entire, cordiform, acuminate; callus tridentate, prolonged into three short keels, hollow under the callus between the keels. **Column** straight. **Clinandrium** reduced, erose. **Pollinia** 4, subglobose, subequal; caudicles slightly longer than pollinia, soft and granular; viscidium semiliquid. **Nectary** penetrating 1/2 the length of the ovary.

OTHER SPECIMENS: COSTA RICA: Puntarenas: Monteverde Cloud Forest Reserve, Pacific slope, 10°18'N 84°48'W, *Haber 6027 ex Bello* MO!

DISTRIBUTION AND ECOLOGY: Known only from the type locality, epiphytic on trunk of *Guarea gullata* and *Ficus sp*. in cloud forest and lower montane wet forest, at about 1500 m altitude. Flowering from July to October, probably throught the year due to successive flowers.

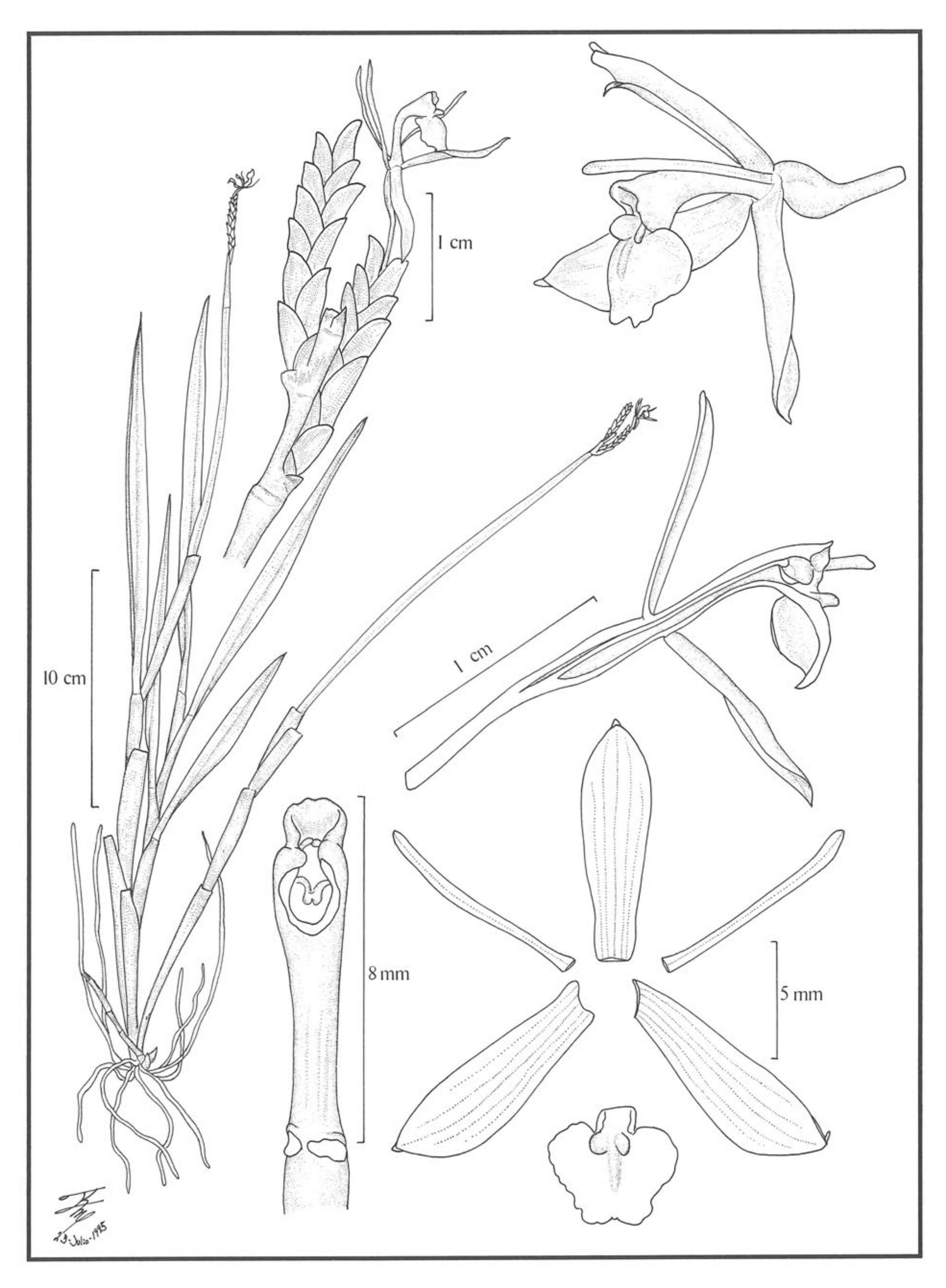
RECOGNITION: *Epidendrum ingramii* is closely related to *Epidendrum albertii* but can be recognized by its white or greenish-white flowers, the 22-25 mm long sepals and petals, the cordiform, acuminate lip and the notably acuminate floral bracts, with only the first 1-2 bracts of the inflorescence short and obtuse to rounded. *E. albertii* has reddish-green flowers, sepals 12 mm long, the lip ovate, base cordate, acute, 6 mm long and the floral bracts are not acuminate but rounded and relatively short. *E. notabile* Schltr. from Costa Rica and Panama has greenish-white flowers, the floral segments elliptic, petals and lip with the margins denticulate, the lip subquadrate, base cordate and minutely apiculate. The specimen *Dodson 3130 & Hills* from Cali-Buenaventura in Colombia has similar shaped green flowers and the inflorescences have wide, rounded bracts that are massive in comparison.



CONSERVATION STATUS: Not threatened, the area where the species has been found is well protected.

ETYMOLOGY: In honor of Stephen Ingram, former curator of the herbarium at The Marie Selby Botanical Gardens, who collected the type specimen.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM JEFEALLENII Hágsater & García-Cruz

Plate 339

EPIDENDRUM JEFEALLENII Hágsater et García-Cruz, *sp. nov.*

Holotype: PANAMA: Provincia Panamá: Cerro Jefe, alt. 1000 m, 13 Feb. 1977, *C. Luer & J. Luer 1400* SEL! (illustration voucher). Isotype: F!

Epidendro adnato Ames & C. Schweinf. simile sed bracteis floralibus angustioribus, labello cordiformi in apice emarginato 5-6 mm lato, clinandrio prominenti, differt.

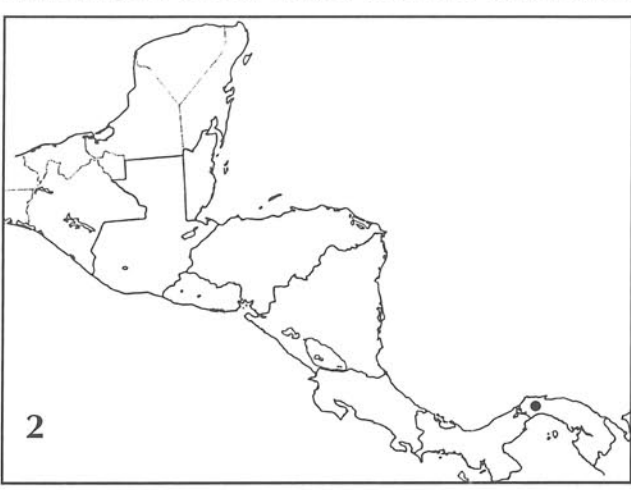
Hierba epífita, cespitosa, ca. 40 cm de alto. **Raíces** basales, carnosas, 1-1.5 mm de grosor. **Tallos** tipo caña, sencillos, rectos, teretes en la mitad basal, ancipitosos hacia el ápice, 10-15 x 0.2-0.4 cm. **Hojas** 3-5, distribuidas a lo largo del tallo; vaina tubular, ancipitosa, estriada, 20-50 mm de largo; lámina linear-lanceolada, largamente acuminada, angostamente cuneada hacia la base, 9-17 x 0.7-1.1 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, erecta, pudiendo florecer varias veces del mismo pedúnculo, raramente de la base del pedúnculo, 17-22 cm de largo; pedúnculo largo, ancipitoso, bialado, las alas prominentes en la base pero disminuyen hacia el ápice, 13-18 cm de largo; bráctea del racimo 1, lanceolada, aguda, conduplicada, 1.5-2.5 x 0.4-0.6 cm. **Brácteas florales** más cortas que el ovario, conduplicadas, oblongas, obtusas, imbricadas, cubriendo completamente al raquis, persistentes en el raquis sin flores, 4-8 x 3-4 mm. **Flores** 5-10 por racimo, abiertas una a la vez, sucesivas, resupinadas, verde pálido. **Ovario** ligeramente inflado en el tercio apical, no ornamentado, 10-12 x 2 mm. **Sépalos** entreabiertos, angostamente obovados, obtusos, mucronados, margen extendido, 5-nervados, 10-11 x 3-3.5 mm; los **laterales** agudos. **Pétalos** inflexos, lineares, obtusos, margen extendido, 1-nervados, 9.5-10 x ca. 0.5 mm. **Labelo** unido a la columna, entero, aspecto general cordiforme, la base cordada, con un par de senos muy ligeros hacia el ápice, ápice emarginado, con un apículo en el seno, margen entero a eroso, 4-5 x 5-6 mm; bicalloso, callos lateralmente comprimidos, carnosos; disco unicarinado, carina roma prolongándose hasta la mitad de la lámina del labelo. **Columna** ligeramente arqueada hacia el ápice, ensanchada hacia el ápice, ca. 8 mm de largo. **Clinandrio** prominente, entero, ligeramente sinuoso. **Antera** semiovada, 4-locular. **Polinios** 4, obovoides, subiguales. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo más de la mitad de la cavidad estigmática. **Nectario** penetrando ca. de 1/3 de la longitud del ovario, ligeramente inflado, no ornamentado. **Cápsula** no vista.

Epiphytic caepitose **herb**. **Stems** simple, cane-like, terete at the base, ancipitose towards the apex. **Leaves** linear-lanceolate, acuminate, narrowly cuneate at the base. **Inflorescence** apical, pluriracemose, flowering several times from the same peduncle; peduncle long, ancipitose, bialate, wings prominent at the base. **Floral bracts** conduplicate, shorter than the ovary, oblong, obtuse, imbricated, hiding the rachis. **Flowers** 5-10 per raceme, succesive, one open at a time per raceme, resupinate, pale green. **Ovary** slightly inflated in the apical third, not ornamented. **Sepals** partly open, narrowly obovate, obtuse, mucronate, 5-veined; **laterals** acute. **Petals** inflexed, linear, obtuse, 1-veined. **Lip** entire, cordiform, a couple of slight sinuses near the apex, apex emarginate, margin entire to erose; bicallose, callus laterally compressed, fleshy; keel 1, throught the middle of lip. **Column** slightly arcuate near the apex, wider at the apex. **Clinandrium** prominent, entire to slightly sinuate. **Anther** semiovate, 4-celled. **Pollinia** 4, obovoid. **Rostellum** subapical, slit. **Nectary** penetrating 1/3 of the ovary, slightly inflated.

OTHER SPECIMENS: PANAMA: Panama: Cerro Jefe, 1.5 km before weather station, *Sytsma 1500* AMO! Cerro Jefe, 4 mi past Cerro Azul on road to Altos de Pacora, *Sytsma 3657 & D'Arcy* AMO! Newly bulldozed trail of Cerro Jefe road, 0.4 km beyond turnoff to Altos de Pacora, *J. T. & F. Witherspoon 8575* AMO!

DISTRIBUTION AND ECOLOGY: Known only from Cerro Jefe and its environs, growing epiphytically in cloud forest, between 850 and 1000 m alitude. Flowering from September to February, and apparently throughout the year, since the flowers are successive.

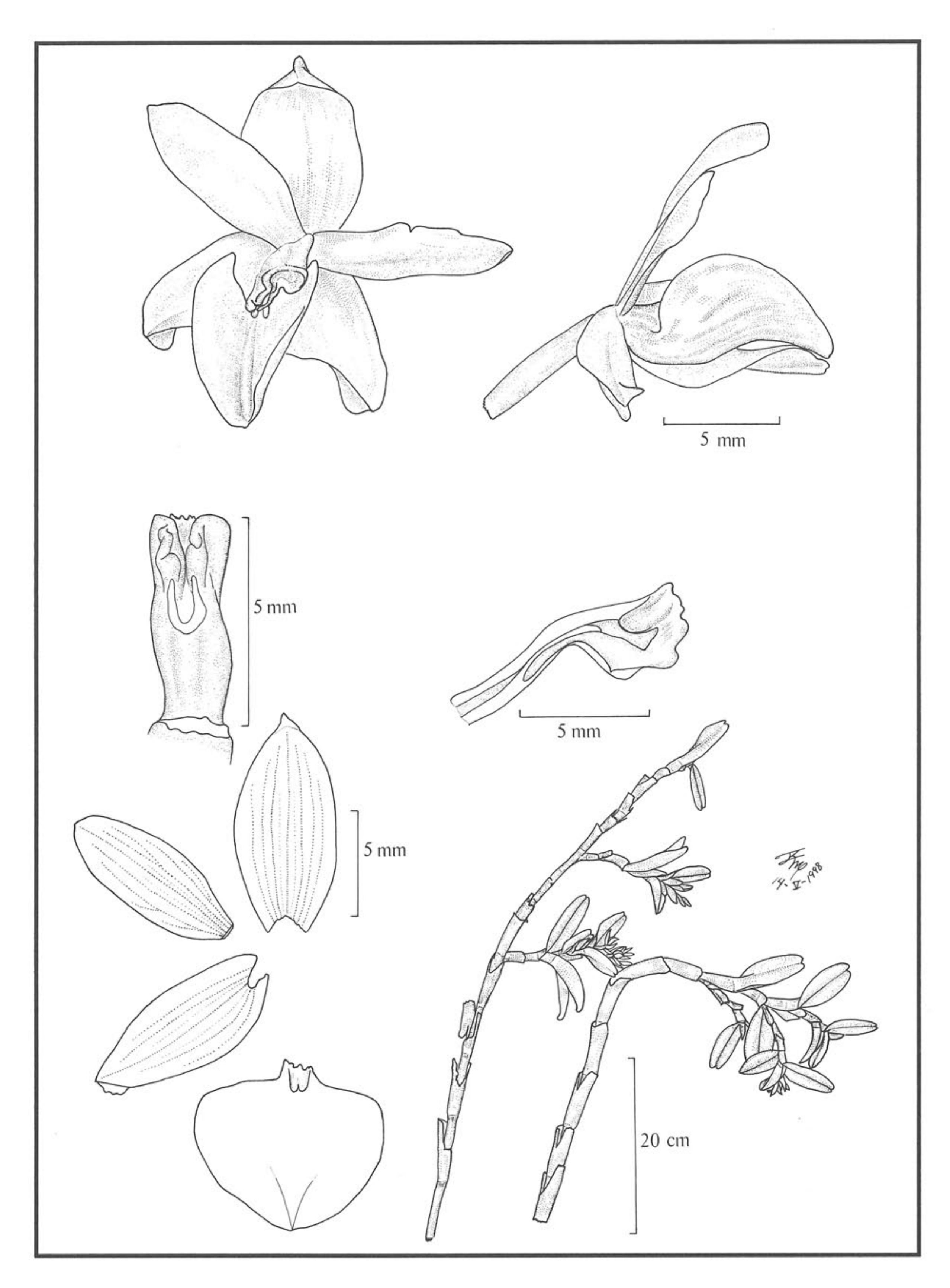
RECOGNITION: *E. jefeallenii* belongs to *E. allenii* L. O. Williams group, and can be recognized by its narrower floral bracts, cordiform lip, with emarginate apex and 5-6 mm wide, sepals narrowly obovate. *Epidendrum adnatum* has a entire, ovate, acute lip, 3-4 mm wide, sepals lanceolate. *Epidendrum lankesterii* Ames, has wider leaves, inflorescence longer than the apical leaves, wider floral bracts, subrounded to subovate lip, slightly lobulated toward basal half, 4 mm wide, disc without keels. *Epidendrum maduroi* Hágsater & García-Cruz, has wider leaves and floral bracts, entire, subreniform lip, disc unicarinate.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named after the mountain on which it has been collected, the Cerro Jefe, and the *E. allenii* group to which it belongs.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM JEFESTIGMA Hágsater & García-Cruz

Plate 340

EPIDENDRUM JEFESTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: PANAMA: Panamá: Cerro Jefe, ca. 800 m, col. 11 Apr. 1977, ***W. G. D'Arcy 11379*** MO! (illustration voucher).

Epidendro ramoniano Schltr. simile sed floribus albo-viridulis, labello et columna alba, ovario recto, sepalis ellipticis usque lanceolatis valde carinatis, carina erosa, labello integro, suborbiculari ad basem truncato, recedit.

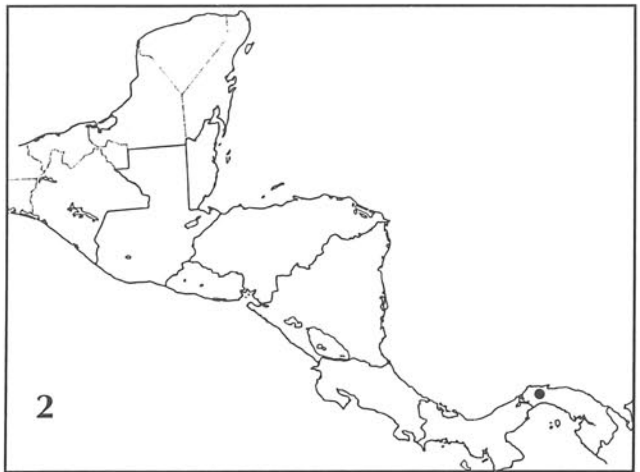
Hierba epífita, esencialmente monopodial, de 150 cm de alto o más. **Raíces** basales, carnosas. **Tallos** teretes, tipo caña, ramificados, el principal 0.4-1 cm de grosor, los secundarios 0.3-0.8 cm de grosor. **Hojas** distribuidas a lo largo del tallo principal cuando joven, pero cuando se ramifica se caen, las hojas de las ramas persistentes; vaina tubular, rugosa, estriada, papirácea, grisácea, 1-6.5 cm de largo; lámina elíptica, ápice oblicuamente bilobado, redondeado, las del tallo principal 4-9 x 1-1.5 cm, las de las ramas secundarias 2-5 x 1-1.7 cm, las de las ramas terciarias 1.5-4 x 0.7-1.5 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, florece una sola vez, racemosa, dística, ligeramente arqueada, 1.5-3 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.3-0.6 cm de largo; cubierto parcialmente por 1 bráctea conduplicada, oblongo-ovada, obtusa, 0.8-1.2 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, mucho más largas que el ovario, no imbricadas, anchamente ovadas, obtusas, 0.8-1.3 x 0.6-1 cm. **Flores** 2-4, simultáneas, resupinadas, perianto blanco-verdoso, el labelo y la columna más blancos. **Ovario** no ornamentado, cubierto completamente por las brácteas florales, recto, 4.5-5.5 mm de largo. **Sépalo dorsal** entreabierto, elíptico, obtuso, fuertemente carinado, 8-nervado, 9-13 x 4-7 mm. **Sépalos laterales** extendidos, lanceolados, agudos, fuertemente carinados, la carina erosa, 8-nervados, 9-13 x 3-6 mm. **Pétalos** entreabiertos, elípticos, obtusos, 5-nervados, 8-12 x 3-5 mm. **Labelo** unido a la columna, entero, suborbicular, envolviendo completamete a la columna, base truncada, ápice redondeado, margen ligeramente revoluto en posición natural, 8-10 x 9-13 mm; unicalloso, callo laminar bilobado; unicarinado, carina a lo largo de la lámina del labelo. **Columna** recta, corta, tubular, 4 mm de largo. **Clinandrio** corto, eroso. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 1/3 de la cavidad estigmática. **Nectario** penetrando cerca de 1/2 de la longitud del ovario, no ornametnado. **Cápsula** no vista.

Epiphytic monopodial **herb**. **Stems** branched, terete. **Leaves** elliptic, apex obliquely bilobed, those of the main stem longer and deciduous, those of the branches smaller and persistent. **Inflorescence** apical from the branches, racemose, distichous, slightly arcuate. **Floral bracts** conduplicate, longer than the ovary, widely ovate, obtuse. **Flowers** 2-4, simultaneous, resupinate, whitish green, lip and column white. **Ovary** straight. **Dorsal sepal** elliptic, obtuse, strongly carinate, 8-veined. **Lateral sepals** lanceolate, acute, strongly carinate, keel erose, 8-veined. **Petals** elliptic, obtuse, 5-veined. **Lip** entire, suborbicular, base truncated, apex rounded; unicallose, callus laminar, bilobate; keel 1 full length of lip. **Column** straight, short. **Clinandrium** short, erose. **Anther** subspherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Rostellum** subapical, slit. **Lateral stigma lobes** small. **Nectary** penetrating one half of the ovary.

OTHER SPECIMENS: PANAMA: Panamá: Distrito Panamá, Cerro Jefe by Radio Tower, *D'Arcy 16061 & McPherson* SEL! Top of Cerro Jefe, 2.3 km N of Panamaerican Highway, *Folsom et al. 2508* MO! Cerro Jefe (Cerro Azul), N of Interamerican Hwy., *McPherson 6874* MO! Top Cerro Jefe, *Tyson et al. 4416* MO!

DISTRIBUTION AND ECOLOGY: Known only from Panamá. Epiphyte, around Cerro Jefe on the Pacific slope, in rain forest, from 800 to 900 m altitude. Flowering from March to July.

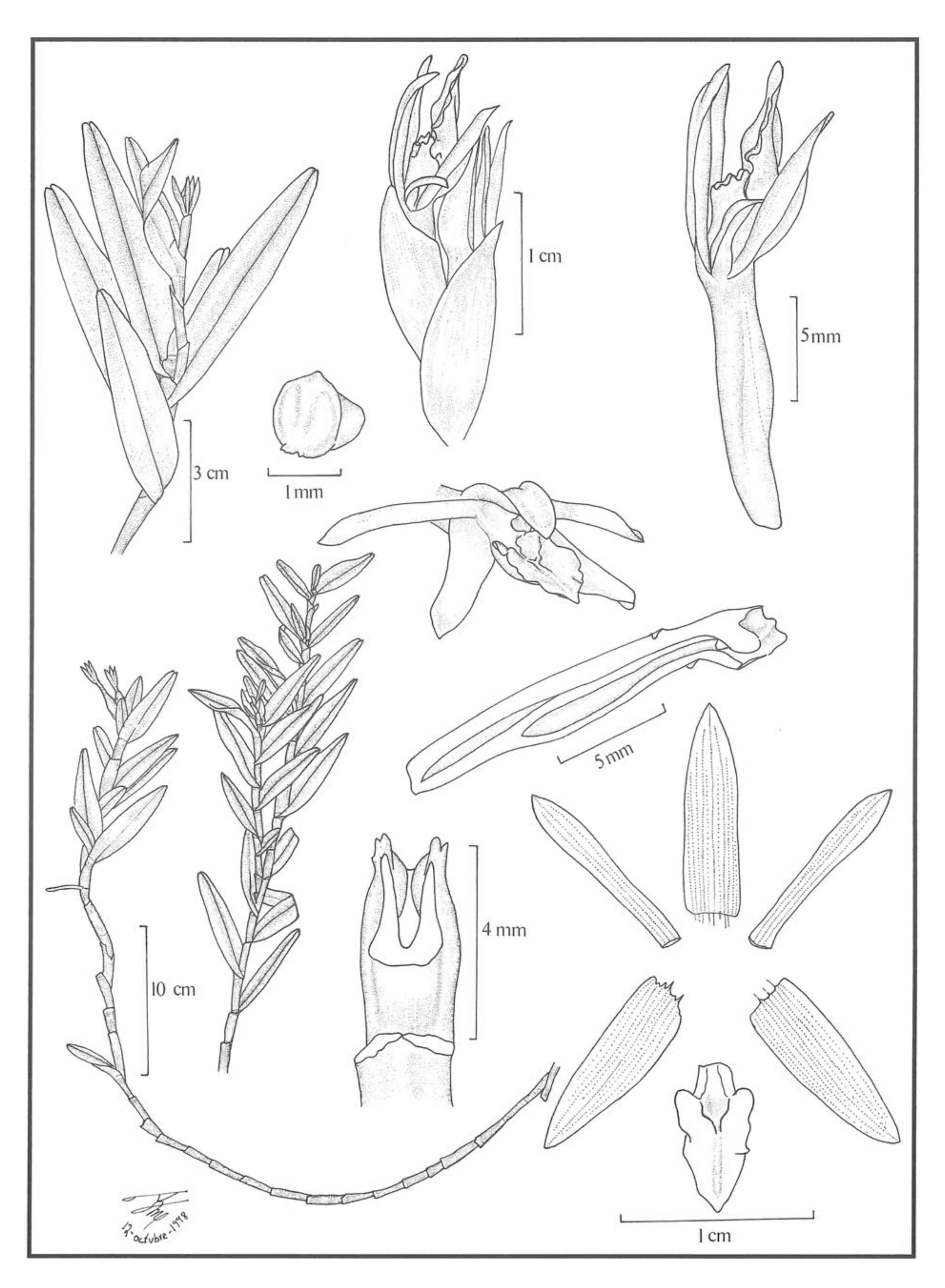
RECOGNITION: *Epidendrum jefestigma* belongs to the *Epidendrum platystigma* Rchb. f. group and is recognized by its large plants with elliptic leaves, secondary and tertiary branches with leaves 1.5-5 x 0.7-1.7 cm, the floral bracts widely ovate, 0.8-1.3 cm long, flowers whitish green, the lip and column white, ovary straight, sepals elliptic, the lateral lanceolate, acute, strongly carinate, keel erose, 3-7 mm wide, lip subcircular, base truncate, callus bilobate, clinandrium erose. *Epidendrum ramonianum* has flowers white, column green, ovary arcuate, lip widely ovate, base truncate, callus tridentate. *Epidendrum penneystigma* Hágsater & García-Cruz has secondary and tertiary branches with leaves 1.5-5 x 0.7-1.5 cm, floral bracts not imbricate, flowers white, sepals elliptic-lanceolate, lip semicircular-flabellate.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the type locality, Cerro Jefe, and the *E. platystigma* group to which it belongs.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM JIMENEZII Hágsater

Plate 341

EPIDENDRUM JIMENEZII Hágsater, *sp. nov.*

Holotype: COSTA RICA: Cocos Island, Wafer Bay, Arroyo del Genio, 13 Apr. 1965, ***A. Jiménez M. 3178*** F! Isotype: CR! MO! SEL! U!

Epidendro insulano Schltr. simile sed foliis majoribus, caulibus secundariis longioribus et floribus albis.

Hierba epífita, de simpodio colgante, 100 cm o más de largo. **Raíces** producidas cerca de los nudos basales de los tallos principales, delgadas, hasta 1.5 mm de grosor. **Tallos** ramificados, tipo caña, rectos, ligeramente lateralmente aplanados, hasta 75 x 0.2-0.5 cm, los secundarios o florales (en plantas adultas) más cortos, 12 cm de largo, pero producen un nuevo tallo cerca del ápice. **Hojas** numerosas, distribuidas casi a todo lo largo de cada tallo, (pero en tallos viejos pueden haberse perdido), vaina tubular, estriada (en ejemplares de herbario), hasta 2.1 x 0.5 cm; lámina articulada, angostamente lanceolada, ápice bilobado, margen entero, subcoriácea, lisa; las del tallo principal de tamaño semejante excepto las basales más pequeñas, de 6-8 x 0.9-1.5 cm; las de los tallos secundarios progresivamente más grandes hasta la penúltima, siendo la apical más pequeña, en ocasiones la lámina reducida. **Espata** ausente. **Inflorescencia** apical, de los tallos secundarios, florece una sola vez, dística, 3 cm de largo; raquis no visible, la base envuelta en una vaina foliosa más pequeña que las hojas. **Brácteas floraesl** conduplicadas, más cortas que el ovario, 11-21 mm. **Flores** 1-2, blancas, fragancia no registrada. **Ovario** pedicelado, ligeramente inflado ventralmente hacia la mitad, 10-14 mm largo. **Sépalos** entreabiertos, libres, angostamente ligulado-obovados, agudos, quilla dorsal apical, prominente en los laterales, glabros, subcoriáceos, margen lateral algo revoluto, 11-nervados, 8-10 x 2.5-3.0 mm. **Pétalos** extendidos, ligulados, ligeramente dilatados en la mitad apical, obtusos, margen algo revoluto, membranáceos, 3-nervados, 9.5-10 x 1.6 mm. **Labelo** unido a la columna, entero, cordiforme, ápice obtuso, mucronado, subcoriáceo, 5.5 x 3.6 mm; callo en forma de "Y", formado por dos prolongaciones de la columna que se juntan en una quilla central. **Columna** recta, gruesa, 5 mm de largo. **Clinandrio** reducido, sinuoso, con un diente corto a cada lado. **Nectario** prominente, penetrando algo más de la mitad del ovario, inflado hacia el fondo. **Cápsula** ovoide, piramidal, sin pedicelo, el cuerpo 12 x 8 mm, cuello apical 6 mm de largo.

Epiphytic, pendent **herb.** **Roots** from the basal nodes of the main stems, thin. **Stems** branching, cane-like, straight, somewhat laterally flattened, the secondary flowering stems, short, but producing a new extension from the apex. **Leaves** numerous, distributed throughout the stems, blade narrowly lanceolate, apex bilobed, subcoriaceous, those of the main stem similar except for the basal ones which are smaller, those of the branches unequal, progressively larger, except for the last one which is often reduced. **Inflorescence** apical, from the secondary stems, flowers only once, the base enveloped in a foliose sheath which is smaller than the leaves. **Floral bract** conduplicate, shorter than the ovary. **Flowers** 1-2, white. **Ovary** slightly inflated ventrally towards the middle. **Sepals** partly spreading, free, narrowly ligulate-obovate, acute, with a prominent apical keel on the laterals, 11-veined. **Petals** spreading, ligulate, slightly dilated towards the apical half, obtuse, 3-veined. **Lip** entire, cordiform, obtuse, mucronate; callus "Y" shaped, ending in a central keel. **Column** straight. **Clinandrium** reduced, sinuose, with a short tooth on each side. **Nectary** prominent, penetrating more than half the ovary, inflated towards the end. **Capsule** ovoid, pyramidal, without pedicel, with a short apical neck.

OTHER SPECIMENS SEEN: COSTA RICA: Wafer Bay, *Dressler 4468* CR! FLAS! Cocos Island, *Foster 4117* US! Estación Wafer, *Lépiz 359* INB! (illustration voucher).

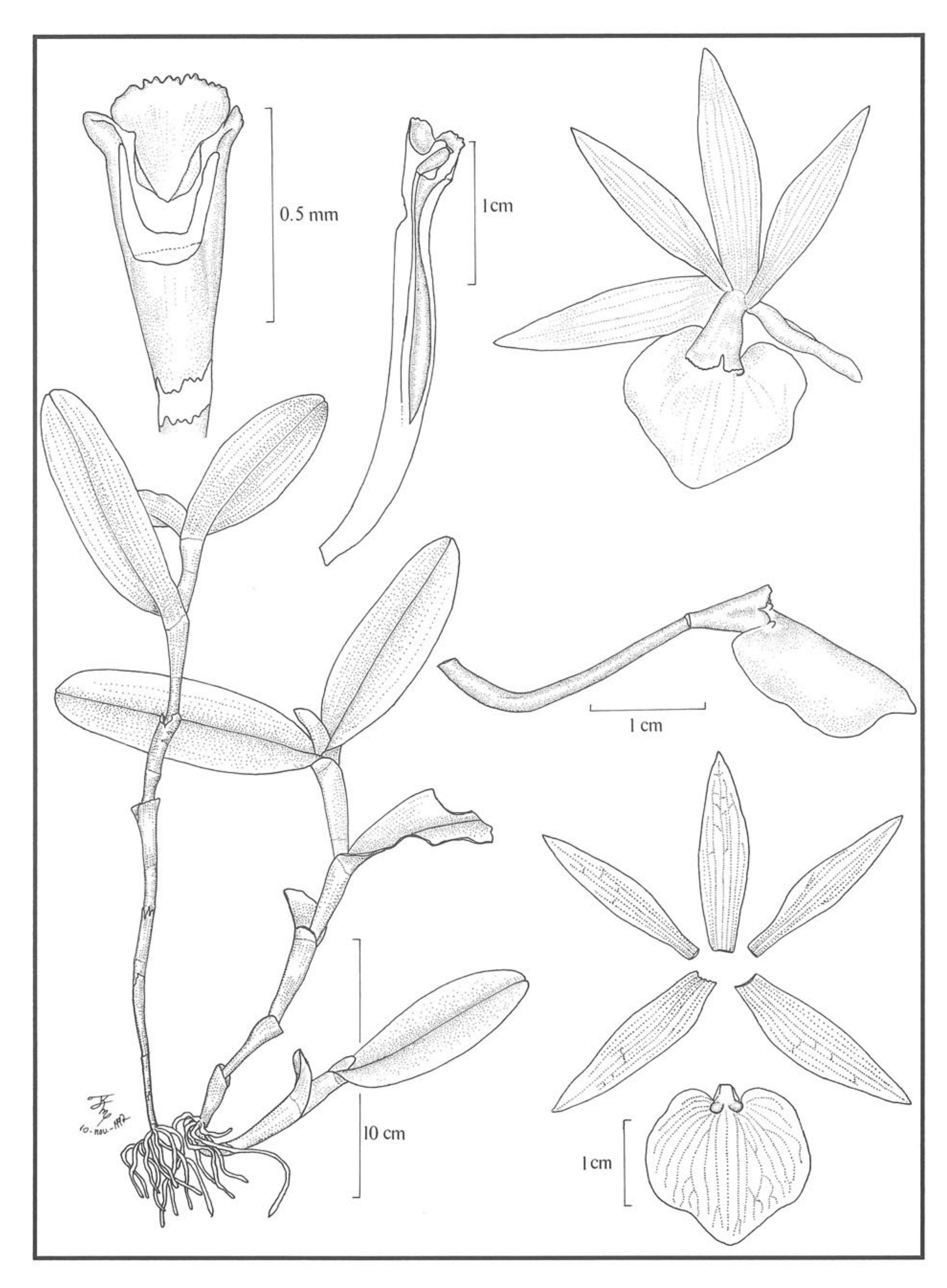
DISTRIBUTION AND ECOLOGY: Endemic to Cocos Island, growing from 0 to 100 m altitude. Flowering from April to August.

RECOGNITION: *Epidendrum jimenezii* is recognized by its 1-2 white flowers with 3-veined petals produced from a secondary stem some 12 cm long and the relatively large leaves, 6-8 cm long. It is superficially similar to *E. insulanum* with which it has been confused, both being sympatric, though this species has shorter secondary stems, 6-10 cm long, and leaves up to 5 cm long, thus being less robust and smaller overall. *Epidendrum cocoënse* Hágsater, also endemic to Cocos Island, has successive stems 15-30 cm long, lacking diversified main stems and branches, is thus quite different in its vegetative structure, the flowers are lemon-yellow, and the petals are 5-veined.



ETIMOLOGY: In honor of Alfonso Jiménez M. who collected the type.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM KILLIPII Hágsater & L. Sánchez

Plate 342

EPIDENDRUM KILLIPII Hágsater *et* L. Sánchez, *sp. nov.*

Holotype: COLOMBIA: Intendencia El Chocó, Corcovada Region, upper Río San Juan, ridge along Yeracüi Valley, 24 Apr. 1939, 200-275 m, ***E. P. Killip 35303*** US! (illustration voucher). Isotype: AMES!

Epidendro platychilo Schltr. simile sed petalis rhombeis margine integro, labello suborbiculari-cordiformi sine venis incrassatis in disco.

Hierba epífita, cespitosa, 18-28 cm de alto. **Raíces** basales, carnosas, delgadas, 0.2-0.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 16-24 x 0.3-0.9 cm. **Hojas** 3-8, desiguales, equidistantes a lo largo del tallo, coriáceas; vainas lateralmente comprimidas, 2-3.5 cm de largo; lámina ovado-elíptica, con venas evidentes, retusa, carina dorsal baja, 3-11 x 1.5-3.5 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, sésil. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, 3-3.5 mm de largo. **Flores** 1-3, resupinadas, simultáneas, verdes. **Ovario** no inflado, terete, 19-20 x 1.2-1.5 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, 7-nervados. **Sépalo dorsal** elíptico, agudo, margen revoluto, entero, 20-23 x 5.5-6 mm. **Sépalos laterales** oblicuamente lanceolados, agudos, margen revoluto, entero, 24-25 x 6-6.5 mm. **Pétalos** entreabiertos, angostamente rómbicos, agudos, margen extendido, entero, membranáceos, 5-nervados los laterales ramificados, 23-23.5 x 4-4.7 mm. **Labelo** unido a la columna, entero, suborbicular-cordiforme, margen entero, ápice redondeado, subcoriáceo, 18-18.5 x 19-19.5 mm; bicalloso, los callos pequeños, subglobosos; carinas ausentes. **Columna** recta, obcónica, 6.5-7 x 1.5-2 mm. **Clinandrio** prominente, cónico, dentado. **Antera** subesférica, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** penetrando 1/2 de la cavidad estigmática. **Nectario** penetrando 1/3 de la longitud del ovario. **Cápsula** no vista.

Epiphytic, caespitose **herb**. **Stems** simple, reed-like, laterally compressed. **Leaves** 3-8, unequal, ovate to elliptic, retuse, with evident veins, coriaceous. **Inflorescence** apical, flowering only once, sessile. **Flowers** 1-3, resupinate, simultaneous, green. **Ovary** thin. **Sepals** spreading, glabrous, free, subcoriaceous, acute, margin revolute, entire, 7-veined; the **dorsal** elliptic; the **lateral** obliquely lanceolate. **Petals** spreading, narrowly rhombic, acute, margin entire, 5-veined, laterals branched. **Lip** united to the column, entire, suborbicular-cordiform, margin entire, apex rounded, subcoriaceous; bicallose, the callus subglobose. **Column** straight, obconic. **Clinandrium** prominent, dentate. **Anther** subspheric, 4-celled. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Buenaventura, *Lehmann 3810* G!

DISTRIBUTION AND ECOLOGY: Known only from Colombia, on the western slopes of the Cordillera Occidental, from 200 to 275 m altitude, epiphytic. Flowering in April.

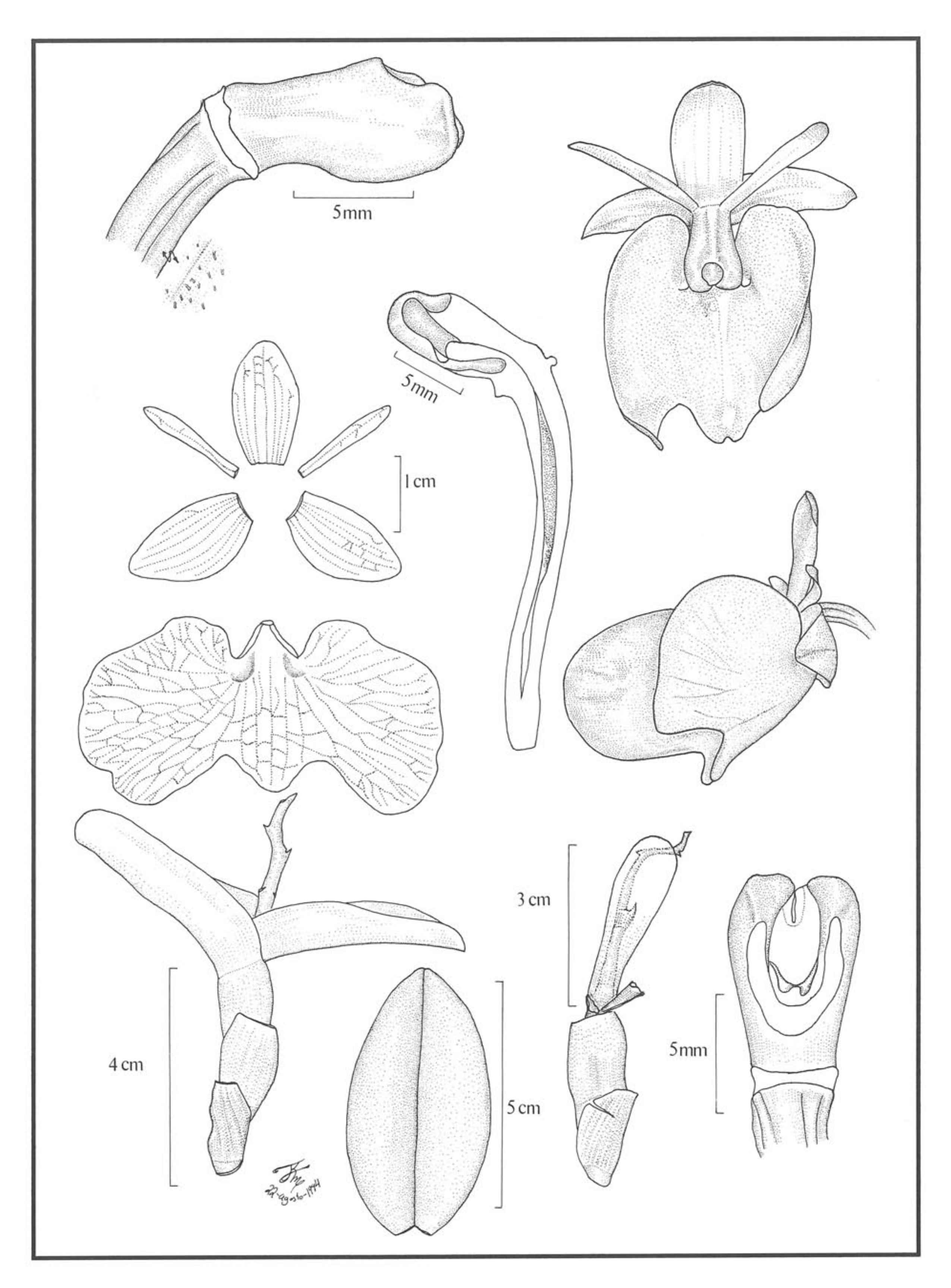
RECOGNITION: *Epidendrum killipii* is a member of the *Epidendrum difforme* Jacq. group and can be recognized by its laterally compressed stems, ovate-elliptic leaves, longer toward the apex, sepals 7-veined, petals narrowly rhombic, 5-veined, lateral veins branched above, lip suborbicular-cordiform. It is similar to *Epidendrum platychilum*, which has smaller plants, somewhat lateral compressed stems, obovate, sinuate petals, lip with several thickened veins.

CONSERVATION STATUS: DD (data defiecient).

ETYMOLOGY: In honor to Ellsworth P. Killip, who collected extensively in Colombia and Ecuador between 1922 and 1944, and collected the specimen that served as type.



Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM KOCKII Hágsater & Dodson

Plate 343

EPIDENDRUM KOCKII Hágsater et Dodson, *sp. nov*.

Holotype: ECUADOR: Loja: Near Loja, ca. 3000 m, cult. Huronview Nurseries, Ontario, Canada, 7 Apr. 1994, ***D. R. Kock sub OIC 10891*** AMO! (Illustration voucher).

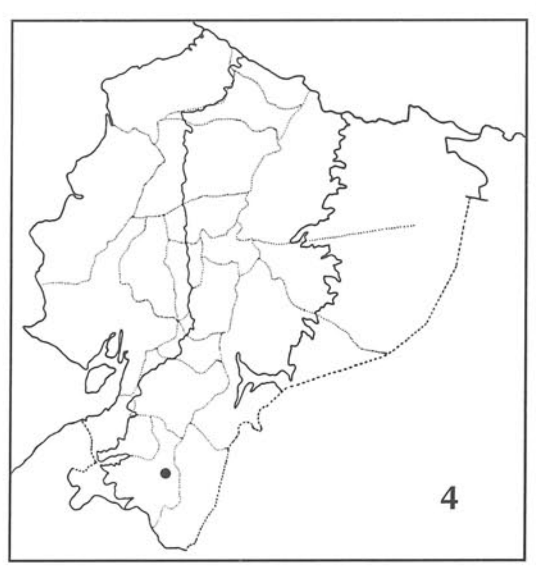
Epidendro nigricanti Schltr. simile sed caule crasso bifoliato, pedunculo brevi et floribus multo majoribus.

Hierba cespitosa, erecta, de 4-9 cm de alto. **Raíces** basales, 2.5-3 mm de grosor. **Tallos** ascendentes, engrosados, lateralmente comprimidos, 2.5-4 x 0.6-1 cm; totalmente cubiertos por 2 vainas basales, imbricadas. **Hojas** 2, carnoso-suculentas; vaina imbricada, 10-20 x 0.7-1.2 mm; lámina elíptica, redondeada, margen entero, color verde, margen y envés irregularmente amoratado, 4-6.5 x 2.1-3.4 cm. **Espatas** 2, conduplicadas, redondeadas, parcialmente ocultas por la vaina de la hoja apical, 16-26 x 5-10 mm de largo. **Inflorescencia** apical, del tallo maduro, florece una sola vez; pedúnculo erecto, lateralmente comprimido, 3.5 cm de largo; bráctea del pedúnculo 1, pequeña, acuminada, 8 mm de largo. **Brácteas florales** mucho más cortas que el ovario, anchamente ovadas, 2 mm de largo. **Flores** 3, simultáneas, resupinadas, grandes y prominentemente exhibidas por un lado de las dos hojas principales del tallo, lustrosas, pardo-rojizas sobre un fondo verde amarillento, fragancia no registrada. **Ovario** delgado, con papilas escasas, cortas, no inflado, 27 mm de largo. **Sépalos** extendidos, ovados, obtusos a redondeados, apiculados, carnosos, 6-7-nervados, 15 x 8 mm. **Pétalos** extendidos, lineares a angostamente oblanceolados, obtusos, 1-nervados, 13 x 2 mm. **Labelo** unido a la columna, trilobado, obreniforme en forma general, cordado en la base, carnoso, 15-23 x 30-43 mm; bicalloso, los callos semicirculares a los lados del ápice de la columna; sin carinas; lóbulos laterales más grandes que el medio, irregularmente suborbiculares, doblados hacia arriba formando una media caña, margen entero, 20 x 19 mm; lóbulo medio anchamente triangular, obtuso, muy pequeño, algo retuso, 5 x 7 mm. **Columna** recta, arqueada en la base con el ovario, gruesa, 9 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos hacia la base; caudículas suaves y granulosas; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** sin traspasar el perianto, no ornamentado. **Cápsula** no vista.

Caespitose **herb**. **Stems** fleshy, laterally compressed, short, completely concealed by 2 imbricating sheaths. **Leaves** 2, fleshy-succulent; sheath imbricating; blade elliptic, green, margin and underside irregularly tinged with purple. **Spathes** rounded, are partly hidden by the upper leaf-sheath. **Inflorescence** apical, from mature stem, enclosed at base by the spathes, flowers only once. **Floral bracts** much shorter than the ovary. **Flowers** 3, simultaneous, large and prominently exposed to one side of the leaves, vernicose, reddish-brown over yellowish-green. **Ovary** thin, not inflated. **Sepals** extended, ovate, obtuse to rounded, fleshy, apiculate, 6-7-veined. **Petals** extended, linear to narrowly oblanceolate, obtuse, 1-veined. **Lip** trilobed, obreniform in general form, basally cordate, fleshy, about twice as wide as long; bicallose, callus semicircular; lateral lobes upturned, forming an open trough, irregular-suborbicular; midlobe very small, wide, triangular, obtuse and somewhat retuse. **Column** straight, but arched downwards at base with respect to the ovary. **Clinandrium** reduced, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed toward the base; caudicles granulose; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** not surpassing the perianth.

DISTRIBUTION AND ECOLOGY: Known only from the type collected in the Province of Loja, southern Ecuador, without any further information.

RECOGNITION: *Epidendrum kockii* is recognized by its short, fleshy stems and leaves, two spathes at the base of the 3-flowered inflorescence, and the very large flowers with the obreniform lip twice as wide as long, 4 cm across. It is closely related to *E. cupreum* Lehm. & Kraenzl., which has an entire, suborbicular lip. *Epidenrum sophronitis* Rchb. f. has one-leaved pseudobulbs and a long, acuminate, cordiform lip. The lip, with a small, triangular apical lobe sets it close to *E. numbalense* Hágsater & Dodson which has 2-3 leaves per stem, and the very similar but much smaller flowers, and the petals proportionately much wider. The outline of the lip is also very similar to *E. nigricans*, but this species has much smaller flowers and an elongate inflorescence.

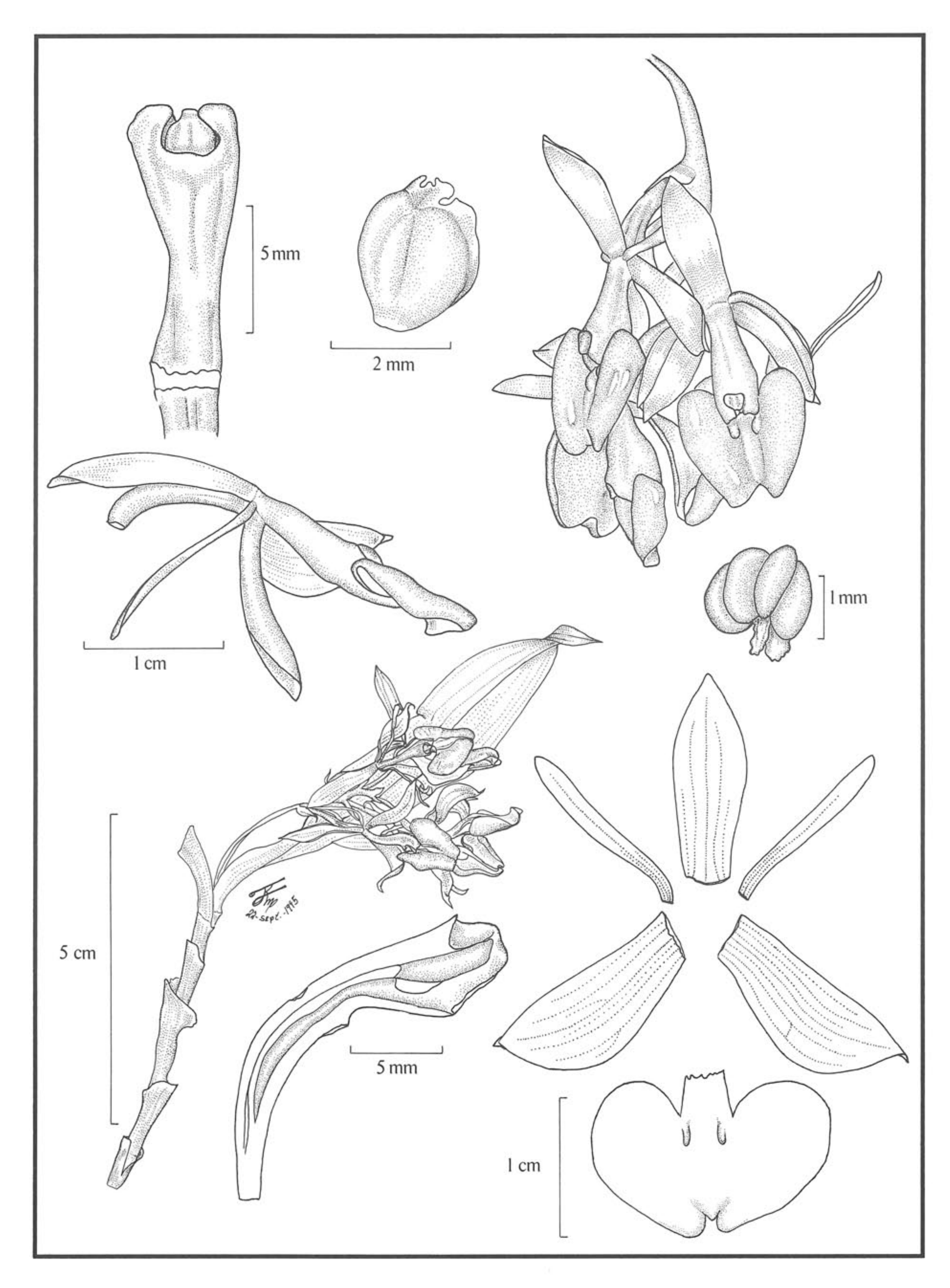


CONSERVATION STATUS: DD (data deficient). The grower has only been able to produce a few vegetative divisions which he is distributing to the Royal Botanical Garden in Mississuaga, Ontario and the Conservatory in Edmonton, Alberta, Canada. Self pollination has been unsuccessful (June, 1998).

ETYMOLOGY: In honor of Dick Kock, of Huronview Nurseries, Ontario, Canada, who has grown the plant and provided material for the illustration, description and type specimen.

ACKNOWLEDGMENT: We are indebted to Ed Greenwood, presently living in Ontario, for his help in preparing parts of the illustration and description, as well as photographs from live material.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM LAMPROCHILUM Hágsater

Plate 344

EPIDENDRUM LAMPROCHILUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: [Antioquia:] Jardín de Alvaro Mejía, Jan. 1973, ***G. Escobar 1024*** AMES! (illustration voucher).

Epidendro brenesii Schltr. simile sed labello profunde cordato margine revoluto eburneo ceraceo nitido, petalis lineari-oblanceolatis 1-nervatis.

Hierba epífita, reptante. **Tallos** sencillos, tipo caña, teretes, rectos, de simpodio erecto, cada tallo nuevo se origina de un entrenudo intermedio del tallo anterior, 4.5 x 0.3 cm. **Hojas** 2-3, distribuidas hacia el ápice del tallo, subcoriáceas; vaina tubular, estriada en seco, 0.6-1.5 cm de largo; lámina angostamente elíptica, aguda, margen entero, lisa, 7.5 x 1.5 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, nutante, 4.5 cm de largo; raquis no ornamentado. **Brácteas florales** más cortas que el ovario, triangular acuminadas, ca. 5 mm de largo. **Flores** 4, simultáneas, resupinadas, sépalos y pétalos ocres, labelo blanco marfil, ceroso, brillante (lustroso), columna lila con antera blanca, fragancia no registrada. **Ovario** algo dilatado hacia el ápice, terete, no ornamentado, 11-12 mm de largo. **Sépalos** oblanceolados, agudos, libres, margen extendido, 5- nervados, glabros, carnosos; el **dorsal** reflexo, 13-16 x 5-6 mm; los **laterales** extendidos, apiculados, oblicuos, con un par de nervaduras secundarias a los lados del nervio central, 14-16 x 4-6 mm. **Pétalos** extendidos, linear-oblanceolados, obtusos, margen entero, 1-nervados, con un par de nervaduras secundarias en la base, 15 x 1.8 mm. **Labelo** unido a la columna, entero, reniforme, ápice con un seno profundo, apiculado, recurvado, margen entero, revoluto, carnoso, 9-12 x 20 mm; bicalloso, los callos laminares, poco prominentes. **Columna** recta, 11 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas ligeramente más largas que los polinios, granulosas; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** penetrando 2/3 partes del ovario, no ornamentado. **Cápsula** no vista.

Repent epiphyte. **Stems** produced from an intermediate internode of the previous stem. **Leaves** narrowly elliptic, acute, subcoriaceous; sheath striate. **Inflorescence** apical, nodding, racemose. **Floral bracts** shorter than the ovary, triangular-acuminate. **Flowers** 4, simultaneous, resupinate, sepals and petals ochre, lip waxy-white, lustrous, column dull purple, the anther white. **Ovary** somewhat dilated towards the apex. **Sepals** oblanceolate, acute, 5-veined. **Petals** linear-oblanceolate, obtuse, 1-veined with a pair of basal secondary veins. **Lip** reniform, apex deeply cleft, apiculate in the sinus, recurvate, margin entire, revolute, fleshy; bicallose, callus laminar. **Column** straight. **Clinandrium** reduced, entire. **Anther** ovoid. **Pollinia** 4, obovoid; caudicules granulose; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** penetrating 2/3 of the ovary.

OTHER RECORDS: COLOMBIA: *Escobar 1024* AMO! (slide of live inflorescence). Also published in **Orquídeas Nativas de Colombia** 5: 769, photo 901 as *Mejía sub Escobar 705*.

DISTRIBUTION AND ECOLOGY: Known only from Colombia, without locality, probably from the Department of Antioquia. Flowering in January.

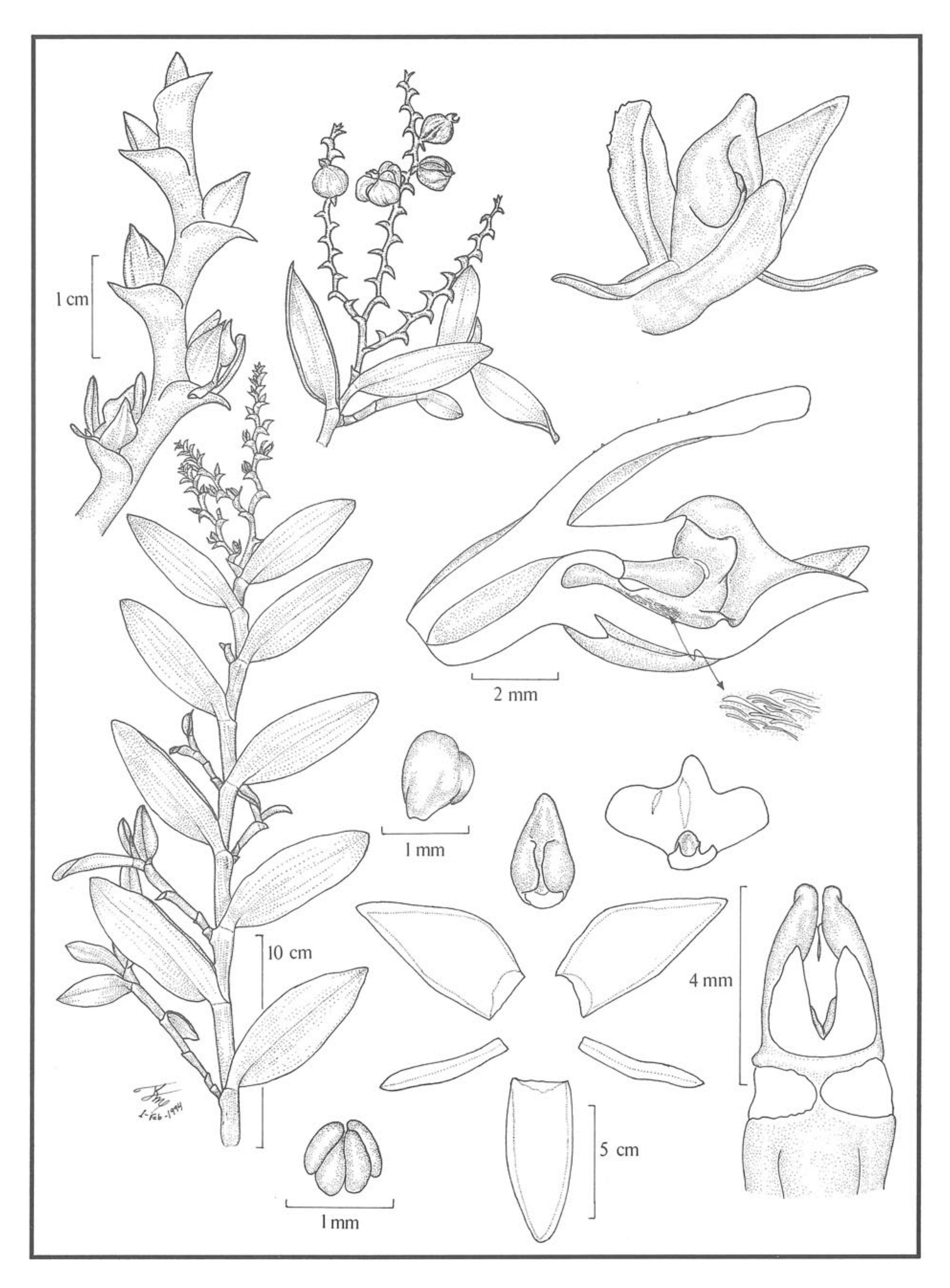
RECOGNITION: *Epidendrum lamprochilum* belongs to the *E. arbuscula* Lindl. group in which the new stem is produced from the middle of the previous stem, and can be recognized by the simultaneous flowers, a bilobed, fleshy, deeply cordate, shining, waxy-looking lip, with a deep apical notch and apiculate in the sinus. It is close to *E. brenesii* from Costa Rica, which has yellow to violaceous flowers, the lip velutinous, reniform and emarginate. *Epidendrum amayense* Hágsater has smaller, concolor, yellow-green flowers, sepals 9 mm long.

5

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek *"lampro"*, bright, lustrous, shining and *"chilus"* lipped, referring the shining quality of the lip.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM LINDAE Hágsater & Dodson

Plate 345

EPIDENDRUM LINDAE Hágsater et Dodson, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca: Camino Cali-Anchicayá, Queremal, estación micronodas Tokio, 1900 m, 25 Apr. 1983, ***E. Hágsater 7337, R. L. Dressler & J. Folsom*** AMO! (illustration voucher).

Epidendro carnosifloro C. Schweinf. simile sed caulibus erectis, inflorescentia paniculata vel racemosa, bracteis triangularibus recurvatis, floribus successivis minoribus.

Hierba terrestre, cespitosa, de más de 40 cm de alto. **Raíces** carnosas, de la base del tallo principal. **Tallos** erectos, ramificados cuando maduros, rígidos, erectos, tipo caña, el principal >35 x 0.7-0.8 cm, las ramas 10-14 x 0.4-0.5 cm. **Hojas** distribuidas a lo largo del tallo, las basales caedizas, las ramas con 3-4 hojas; vaina tubular, finamente rugosa, hasta 4 cm de largo; lámina oblonga, redondeada, margen entero, dorsalmente algo carinada, las del tallo principal más grandes, 7-10.5 x 2.2-3 cm, las de las ramas 4-7 x 1.5-2.2 cm. **Espata** ausente. **Inflorescencia** apical, del tallo principal o de las ramificaciones, florece una sola vez, paniculada o racemosa, erecta, 6-15 cm de largo; bráctea en la base de cada rama triangular, aguda, semejante a las florales, hasta 13 mm de largo. **Brácteas florales** prominentes, coriáceas, rígidas, más largas que el ovario, progresivamente más cortas, en ángulo recto con el raquis y algo recurvadas, triangulares, agudas, margen entero, 6-8 mm de largo. **Flores** hasta 24, no resupinadas, sucesivas, 2-7 abiertas a la vez, carnosas, color verde, el labelo blanco. **Ovario** corto, grueso, no inflado, no ornamentado, 3-4 mm de largo. **Sépalo dorsal** entreabierto, oblongo-lanceolado, obtuso, cóncavo, carnoso, escasamente ornamentado dorsalmente con pequeñas verrugas, 5-nervado, 6 x 2 mm. **Sépalos laterales** entreabiertos, ovado-oblongos, oblicuos, agudos, carnosos, escasamente ornamentado dorsalmente con pequeñas verrugas, carina dorsal apical de margen denticulado, 5-nervados, 7 x 3 mm. **Pétalos** extendidos, lineares, obtusos, carnosos, 1-nervados, 5 x 1 mm. **Labelo** unido a la columna, trilobado, carnoso, 5 x 8 mm; unicalloso, el callo formando un barrera transversal; sin quillas; lóbulos laterales subcuadrados, en posición natural abrazando el ápice de la columna y cubriéndola casi completamente, al extenderse se rompen en la unión con el lóbulo medio; lóbulo medio triangular, obtuso, mucho más pequeño que los lóbulos laterales. **Columna** recta, gruesa, 4 mm de largo, el ápice con un diente triangular oblicuo a cada lado. **Clinandrio** reducido, entero. **Antera** ovoide, truncada, carnosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** apenas penetrando hasta el perianto, con una pubescencia alargada frente al estigma, reclinada y dirigida hacia el interior. **Cápsula** globosa, 15 mm de diámetro, persistente durante la floración del año siguiente.

Caespitose, branching terrestrial. **Stems** erect, branching with age. **Leaves** oblong, rounded, dorsally carinate, those of the main stem larger. **Inflorescence** apical, paniculate or racemose. **Floral bracts** longer than the ovary, spreading at right angles with the rachis to somewhat recurved, triangular, acute, margin entire. **Flowers** non-resupinate, successive, green, lip white. **Sepals** partly opened, oblong-lanceolate to ovate-oblong, obtuse to acute, fleshy, dorsally sparsely ornamented with small warts. **Petals** spreading, linear, obtuse. **Lip** united to the column, fleshy, 3-lobed; callus forming a transverse ridge; without keels; lateral lobes subquadrate, rounded, embracing the column in natural position; midlobe triangular, small. **Column** straight, thick, apex with a triangular upturned tooth on each side. **Nectary** penetrating only as far as the perianth, with an elongate pubescence opposite the stigmatic cavity. **Capsule** globose, persistent during the next season's flowering.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Parque Nacional Munchique, *L. A. de Escobar 4376 et al.* HUA! NY! Ibid. *Escobar 4367 et al.* HUAx2! **Putumayo:** Entre Sibundoy y Mocoa, Cadena "El Mirador", *Ospina-Hernández et al. 101* AMES! **ECUADOR: Carchi:** km 9 de Maldonado hacia Tulcán, 2040 m, *Hágsater 11331 et al.* AMES! AMO! COL! HUA! MO! QCNE! **Pichincha:** km 7 Nono-Tandayapa, *Dodson 10724 et al.* SEL! US!



OTHER RECORDS: PERU: *Bennett [MCB] 1630* AMO! (illustration, xerox).

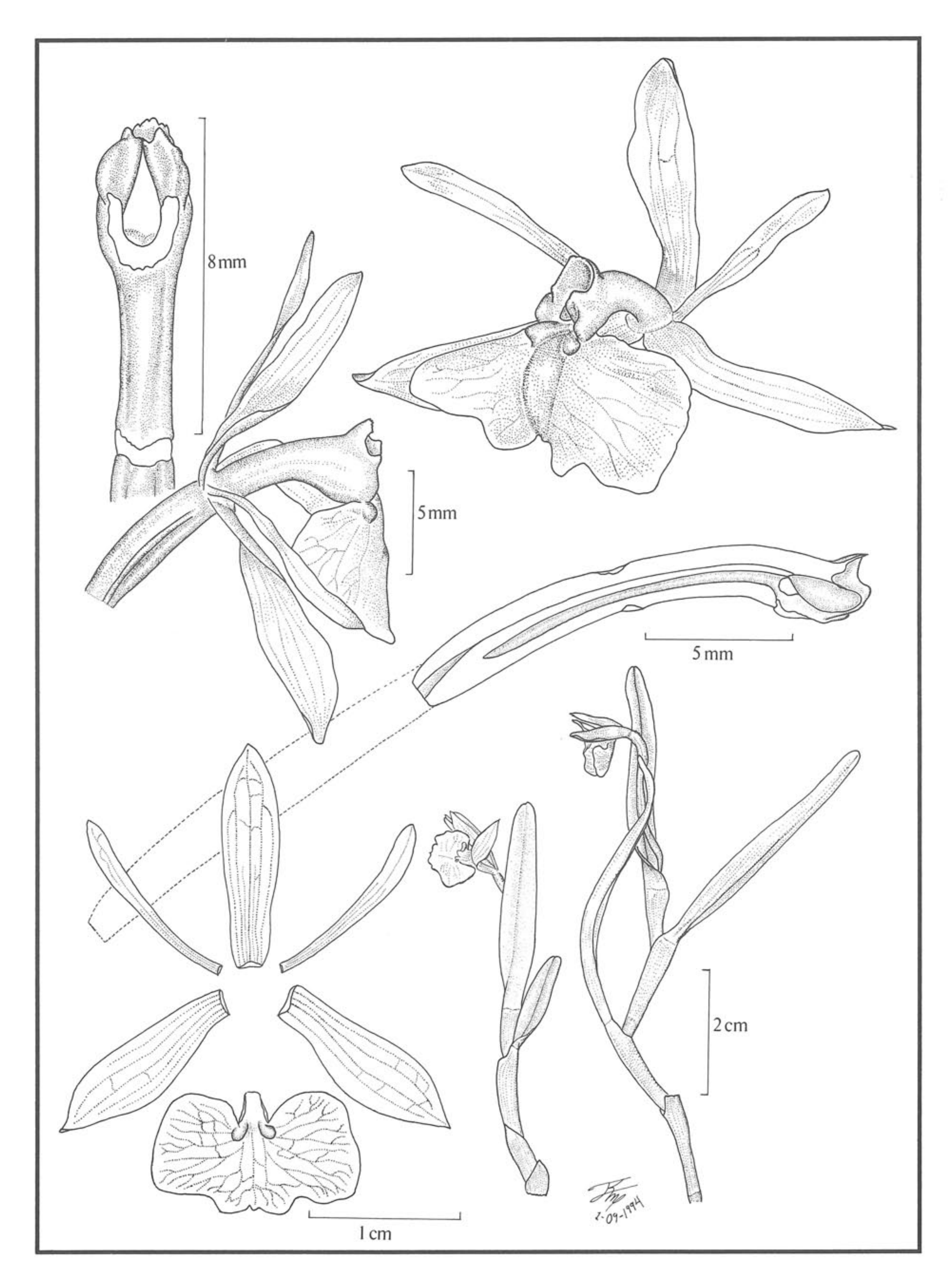
DISTRIBUTION AND ECOLOGY: Colombia, Ecuador and Peru, along the mid slope of the western cordillera of the Andes. At 1700-2580 m altitude, terrestrial in montane cloud forest. Flowering in April-May.

RECOGNITION: *Epidendrum lindae* belongs to the *E. aquaticum* Lindl. group and has erect, branching stems, a paniculate or simple inflorescence, successive, partly open flowers with spreading linear petals, the sinuose rachis with somewhat retrorse bracts is characteristic. *E. carnosiflorum* has narrower leaves (8 mm wide), a simple inflorescence, not branched, and larger flowers, dorsal sepal 10-11 mm long. *Epidendrum rugulosum* Schltr. has somewhat similar flowers, but the leaves are narrowly linear-oblong, the inflorescence simple and the flowers larger.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Linda K. Albert de Escobar (1940-1993), renowned for her work and modern understanding of the passifloras. She spent many years in Colombia, where she eventually became herbarium director at the Universidad de Antioquia in Medellín. She collaborated in several floristic and ecological surveys and collected almost 10,000 numbers of plants, including this species.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM LINEARIDIFFORME Hágsater & L. Sánchez

Plate 346

EPIDENDRUM LINEARIDIFFORME Hágsater et L. Sánchez, *sp. nov.*

Holotype: FRENCH GUIANA**:** Bord de l' Acarouany, Janvire 1856, ***Sagot 864*** P! (illustration voucher).

Epidendro amapensi Hágsater & L. Sánchez simile sed habitu minore, caulibus teretibus, foliis lineari-lanceolatis, lobulis lateralibus labello subquadratis, lobulo medio transverse rectangulari emarginato.

Hierba epífita, cespitosa, 7-9 cm de alto. **Raíces** basales carnosas, filiformes, 1 mm de grosor. **Tallo** sencillo, tipo caña, terete, flexuoso, 3.5-5 cm de largo. **Hojas** 2-3, distribuidas en la mitad apical del tallo, ascendentes; vaina tubular; lámina linear-lanceolada, ápice desigualmente bilobado, 2.5-5.5 x 0.4-0.6 cm. **Espata** ausente. **Inflorescencia** terminal, del tallo maduro, uniflora, sésil. **Bráctea floral** mucho más corta que el ovario, triangular, aguda, 1-1.5 mm de largo. **Flores** 1, resupinada, verde amarillenta. **Ovario** no inflado, terete, 20-27 mm de largo. **Sépalos** extendidos, glabros, libres, subcoriáceos, agudos, margen entero, 5-nervados; el **dorsal** angostamente oblanceolado, revoluto, 13-14 x 3-3.5 mm; los **laterales** oblicuamente elípticos, ligeramente revolutos, 13-14 x 4.0-4.5 mm. **Pétalos** libres, linear-oblanceolados, agudos, membranáceaos, 3-nervados, 12.5-13 x 1-1.3 mm. **Labelo** unido a la columna, cordado en la base, trilobado, 8-9 x 13-14 mm; bicalloso, los callos pequeños, subglobosos; lóbulos laterales subcuadrados, margen entero; lóbulo medio pequeño, transversalmente rectangular, someramente emarginado, con un pequeño mucrón en el seno. **Columna** arqueada, delgada, 5.7-6 mm de largo. **Clinandrio** corto, finamente dentado. **Antera** subglobosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Nectario** penetrando 1/3 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose, epiphyte. **Stems** simple, reed-like, terete, flexuose. **Leaves** 2-3, ascending, linear-lanceolate, apex bilobed. **Spathe** absent. **Inflorescence** apical, sessile. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 1, resupinate, one at a time, greenish yellow. **Ovary** not inflated, terete. **Sepals** spreading, elliptic to narrowly oblanceolate, acute, margin revolute, 5-veined. **Petals** linear-oblanceolate, acute, membranaceous, 3-veined. **Lip** adnate to the column, 3-lobed; bicallose, the callus subglobose; lateral lobes subquadrate; midlobe transversely rectangular, shallowly emarginate, with a minute mucro. **Column** arcuate. **Clinandrium** short, dentate. **Anther** subglose, 4-celled. **Nectary** penetrating 1/3 of the ovary, unornamented.

OTHER SPECIMENS: FRENCH GUIANA: St. Laurent du Maroni, *Service Forestier* P! St. Laurent-du-Maroni, Station Cambrouna, *Service Forestier 4446* CAY! Illa Portal (Maroni), (BRUCIERE), *Veyret 1478* CAY! HB! P! Rive gauche du Yaroupi, environ 500 m en amont du Saut Coueki, *Oldeman B-3086* CAY! Crique Gabrielle, *Poncy 46* P! **SURINAME:** Ad ripas fluv, Marowijne, *Lanjouw & Lindeman 1980* U! In montibus qui dicuntur Nassau, Langs Marowijne oever, tegenover basiskamp, *Lanjouw & Lindeman 2324* U! Circa portum aeronaut ad flum Oelemari, riverside, *Wessels B. 1011* U! Brokopondo: 2 km S of Afobaka, along Sara Creek, Afterwards Lake, *van Donselaar 2106* K! U! Idem. Near outlet of Lokus Creek into Sara Creek, Afterwards Lake, *van Donselaar 2843* AMES! NY! U! Idem. Between villages Bedoti and Gansee Afterwards Lake, *van Donselaar 2883* U! Marowijne: River Marowijne, Arminafalls, *M. & P.Teunissen 1365* SEL! U!

OTHER RECORDS: FRENCH GUIANA: Crique Gabrielle. *Poncy 46* AMO! (flowers in spirit).

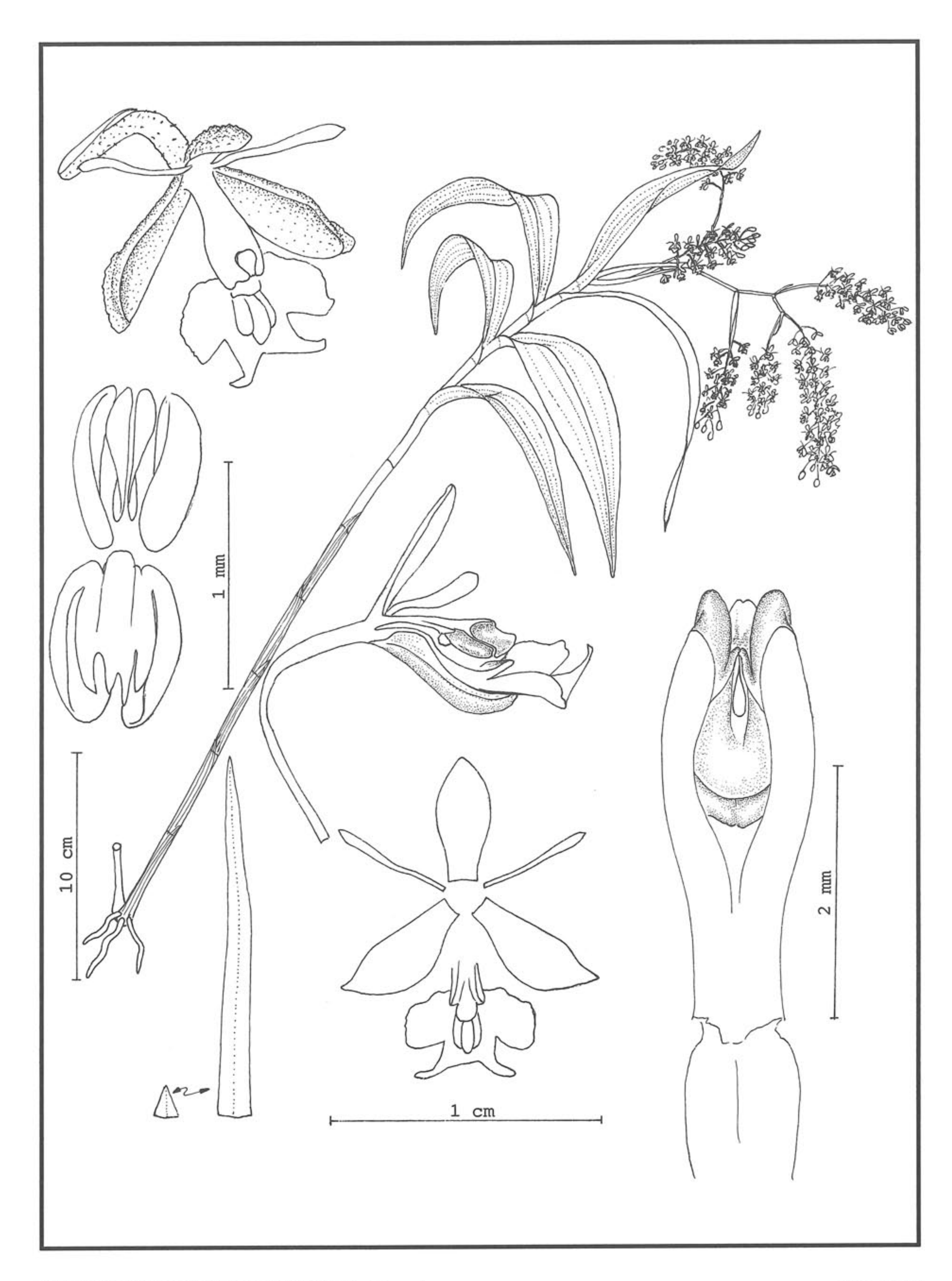
DISTRIBUTION AND ECOLOGY: Known from near the coast of French Guiana and Surinam, epiphyte. Flowering in January.

RECOGNITION: *Epidendrum linearidifforme* can be recognized by its short plants, with terete, flexuose stems, linear-lanceolate ascending leaves, 5.5 x 0.6 cm, elliptic to oblanceolate sepals, linear-oblanceolate petals, 3-lobed lip, lateral lobes subsquare. It is similar to *Epidendrum amapense* which is 12-17 cm tall, with elliptic leaves, semiovate lateral lobes of the lip and a prominent, deeply erose-dentate clinandrium. *Epidendrum oldemanii* E. A. Christenson has 3-5,10-12 x 1.6 cm elliptic leaves, 1-veined petals, reniform-bilobulate lip without any midlobe, strongly convex, column with hooded, fringed, dentate clinandrium. The other species with linear leaves is *E. angustatum* (Hashimoto) Hágsater, from Ecuador which has terete stems, 9-11 leaves, 3 simultaneous flowers with an entire, reniform lip.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Latin "*lineari*" in reference to the linear leaves and "*difforme*" for the group to which the species belongs.



EPIDENDRUM LONGIBRACTEATUM Hágsater

Plate 347

EPIDENDRUM LONGIBRACTEATUM Hágsater, *sp. nov.*

Holotype: PANAMA: Chiriquí: Cerro Horqueta, detrás de Boquete, al E del Volcán Barú, ca. 2000 m, col. 15 Mar. 1981, pressed 7 June 1981, ***E. Hágsater 6526, R. L. Dressler & C. Castro*** AMO! Isotypes: PMA! SEL! Clonotypes: 22 Feb. 1983 F! QCNE! S! WIS! 11 Apr. 1989 AMES! COL! CR! ENCB! G! INB! K! MEXU! MO! NY! P! SCZ! US! USM!

Epidendro parvifloro Ruiz & Pavón simile sed foliis duplo latioribus, bracteis floralibus plerumque longitudinem ovarii superantibus, floribus successivis, lobulis apicalibus labelli anguste triangularibus.

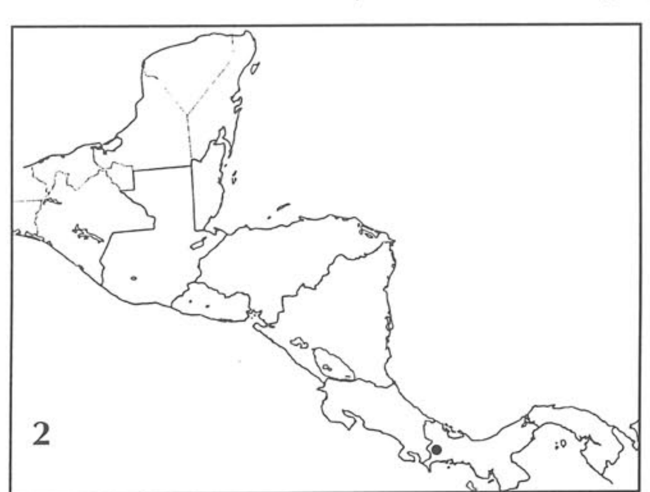
Hierba epífita, cespitosa, 30-48 cm de alto. **Raíces** basales, carnosas, 1.5-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 25-40 cm de largo, 3-7 mm de grosor. **Hojas** 6-11, distribuidas a lo largo de los dos tercios apicales del tallo; vaina tubular, lisa, 1-4.5 cm de largo; lámina lanceolada, acuminada, margen entero, lisa, verde claro con las nervaduras principales claramente marcadas, 7-15 x 1.4-2.4 cm. **Espata** ausente. **Inflorescencia** apical, paniculada, arqueada, del crecimiento maduro, florece una sola vez, 12-26 cm de largo; brácteas basales del pedúnculo 1-3 o ninguna, triangulares, acuminadas, hasta 6.5 cm de largo; raquis ligeramente comprimido. **Brácteas florales** desde más largas que el ovario, especialmente la de las primeras flores de la rama principal, progresivamente más cortas, hasta mucho más cortas que el ovario, triangulares, acuminadas, 3-27 mm. **Flores** 60-200, sucesivas (los botones se desarrollan simultáneamente, pero abren en sucesión, pudiendo estar muchas flores abiertas a la vez, pero no todas), resupinadas, sépalos, pétalos y mitad basal de la columna verde claro, mitad apical de la columna y labelo blancos inmaculados, fragancia ausente. **Ovario** no inflado, fina y escasamente furfuráceo, 7-11 mm de largo. **Sépalos** libres, oblanceolados, margen extendido, carnosos, quilla dorsal ausente, fina y escasamente furfuráceos en el dorso, 3-5-nervados, 4.5-5.5 x 1.5-2 mm; el **dorsal** extendido, obtuso; los **laterales** entreabiertos, agudos, oblicuos. **Pétalos** extendidos, filiformes, dilatados hacia el ápice, redondeados, margen entero, membranáceos, 1-nervados, 4.5-5 x 0.5 mm. **Labelo** truncado en la base, 3-lobado, 3.4 x 5 mm; unicalloso, formando una lámina transversal; disco con tres carinas centrales prominentes, romas; lóbulos laterales subcuadrados, algo oblicuos con las esquinas redondeadas, 2.4 x 1.5 mm; lóbulo medio bilobado, fuertemente divaricado, los lóbulos angostamente triangulares, redondeados, 1.5 x 0.3 mm. **Columna** recta, delgada en el tercio basal, dilatada hacia arriba, 4-4.5 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, el ápice emarginado, 4-locular. **Polinios** 4, tipo ala de pájaro, lateralmente fuertemente comprimidos, los interiores menores, 2/3 del largo de los exteriores, translúcidos; caudículas del largo de los polinios interiores, suaves y lisas; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando hasta la base del perianto, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** cane-like, terete. **Leaves** lanceolate, acuminate, light green with the main veins clearly marked. **Inflorescence** apical, paniculate, with 0-3 long bracts near the base. **Floral bracts** longer than the ovary, especially those of the first flowers of the main branch, progressively shorter, triangular, acuminate. **Flowers** many, resupinate, successive, though many flowers may be open any one time, sepals, petals and base of the column green, apex of the column and lip white, unmarked. **Ovary** thin, finely and sparsely furfuraceous. **Sepals** oblanceolate, obtuse to acute, 3-5-veined. **Petals** spreading, filiform, apex blunt, 1-veined. **Lip** 3-lobed; unicallose, callus a transverse blade, with 3 rounded keels on the disk; lateral lobes obliquely subquadrate, the corners rounded; midlobe bilobed, divaricate, the lobes narrowly triangular, rounded. **Column** straight, thin at basal third, dilated above. **Clinandrium** reduced, entire. **Nectary** penetrating as far as the perianth, unornamented.

OTHER SPECIMENS: PANAMA: Chiriquí: Bajo Chorro, *Davidson 441* AMES! F! Cerro Horqueta, *Dwyer 8750* AMO! Volcán Chiriquí, *Kennedy sub Hágsater 5907* AMO! Cerro Pate Macho, *Sytsma et al. 4823* AMO!

DISTRIBUTION AND ECOLOGY: Apparently endemic to Chiriquí in forests at about 1500-2000 m altitude. Flowering in cultivation in Mexico: (February) April-June.

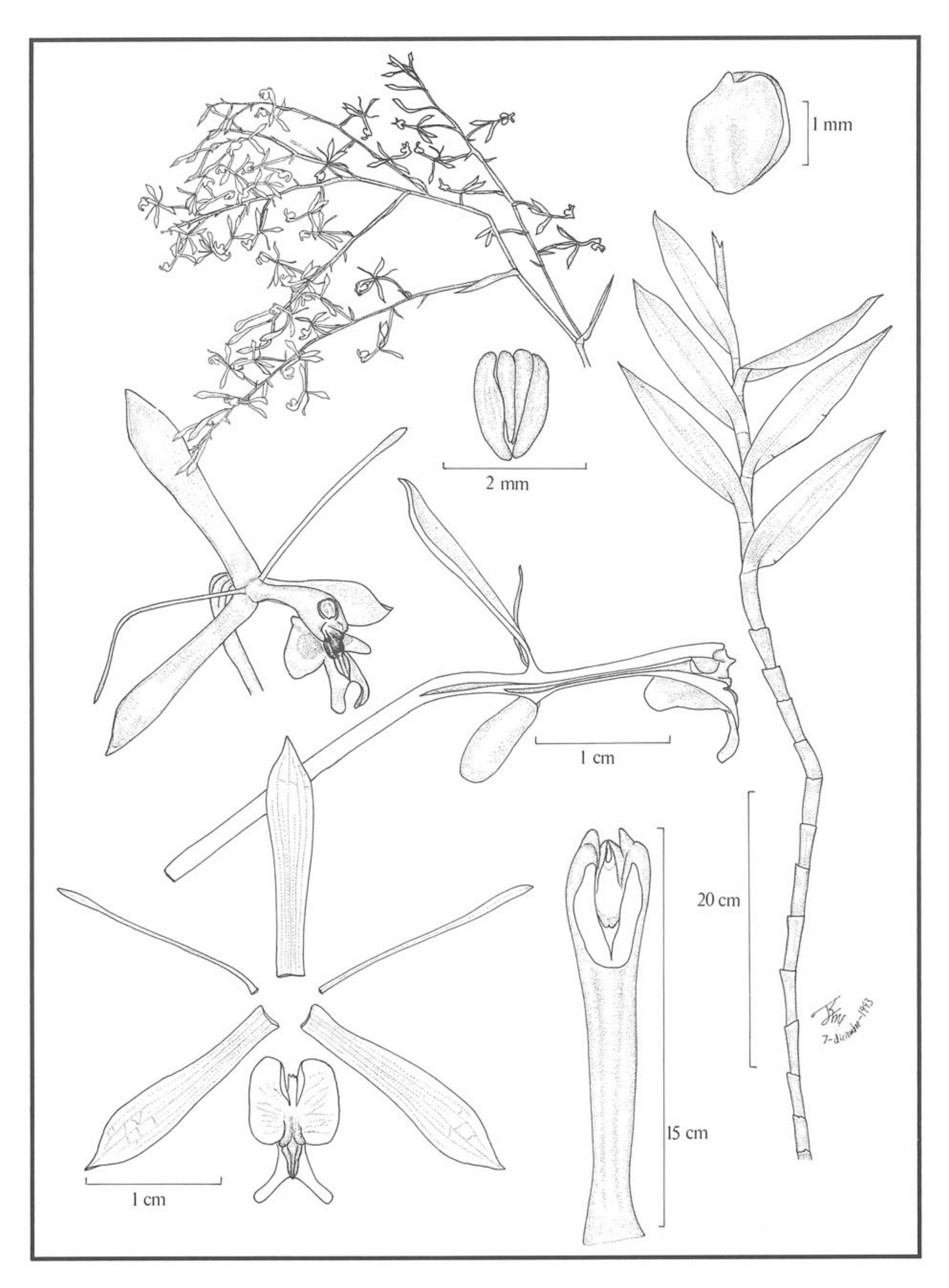
RECOGNITION: A member of the *E. paniculatum* Ruiz & Pavón group, *E. longibracteatum* is intermediate in plant size with light green leaves, the main veins clearly marked, the buds developing simultaneously, though they do not open all at the same time, many may be open at one time, the sepals and petals are green, the lip white, unmarked. The flowers are very similar to those of the South American *E. parviflorum* which has simultaneous flowers, and *E. poeppigii* Hágsater, with successive flowers, but the disk dotted with purple, both of which have much smaller plants and narrower leaves. *E. subnutans* Ames & C. Schweinf., from western Costa Rica, has dark green leaves, the flowers clearly successive (when the first flowers open, the apical buds are still very small and the rachis itself is still developing) so that some six flowers per branch are open, and the floral bracts are mostly shorter than the ovary.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the very long floral bracts.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM LOPEZII Hágsater

Plate 348

EPIDENDRUM LOPEZII Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: El Retiro, Normandía, cult. en Colomborquídeas, ***E. Hágsater 11648*** AMO!

Epidendro paniculato Ruiz & Pavón simile sed floribus simultaneis, sepalis roseo-liliaceis extus, viridi-cinerascentibus intus, petalis viridi-cinerascentibus, lobis lateralibus labelli roseo-liliaceis, lobis apicalibus viridibus, calli et carina purpurea.

Hierba epífita o litófita, cespitosa, 110-170 (250) cm alto. **Raíces** basales, carnosas, 1.5-2.5 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 65-90 x 0.6-1.5 cm. **Hojas** ca. 10-13, dísticas, equidistantes a lo largo del tallo; vaina tubular, 1-5 cm de largo; lámina elíptico-lanceolada, aguda, margen entero, gramínea, lisa, de color verde oscuro, 12.5-17 x 2.6-5.5 cm. **Espata** ausente. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, paniculada, erecta, laxiflora, de 6-7 ramas rectas, extendidas, 40-80 cm de largo; pedúnculo lateralmente comprimido, recto, no ornamentado; brácteas del pedúnculo la basal grande, seguida por otras cada vez más pequeñas, casi cubriendo todo el pedúnculo, hasta transformarse en brácteas de las ramas, agudas, tubulares en la mitad basal, conduplicadas arriba, la basal 8.3-9 x 0.6-1.2 cm de largo; brácteas del raquis triangulares largamente acuminadas, hasta 50 mm de largo. **Brácteas florales** triangulares, acuminadas, de un tercio del largo del ovario, 3-12 x ca. 2 mm. **Flores** hasta 86, sucesivas (aunque todos los botones son del mismo tamaño cuando abren las primeras flores), resupinadas, sépalos y pétalos verde-grisáceos al interior, los sépalos rosado-lila obscuro externamente, columna y lóbulos laterales del labelo rosado-lilas, lóbulo medio verdoso, callos rosados con puntas moradas, mitad basal de las quillas morado oscuro, antera verdosa, ovario rosado-lila, todo tornándose rosado-lilas después de la fecundadación, sin fragancia. **Ovario** no inflado, arqueado y dilatado hacia el ápice, terete, no ornamentado, glabro, 25-39 x 1.4-2 mm. **Sépalos** libres, subreflexos, angostamente obovado-espatulados, casi rectos, agudos, margen extendido, cóncavos, sin quilla dorsal, superficie externa glabra, carnosos, 5-nervados, 17-19 x 3-4 mm. **Pétalos** extendidos, filiformes, redondeado, margen extendido, membranáceos, 1-nervados, 17-19 x 0.6 mm. **Labelo** unido a la columna, trilobado, carnoso, 10-11 x 6-8.5 mm; bicalloso, los callos divergentes; tricarinado, las carinas gruesas en la base las cuales se adelgazan hacia la parte apical; lóbulos laterales mucho más grandes que el apical, tan ancho entre los lóbulos laterales como en el ápice del medio, transversalmente oblongo-subrectangulares, retrorsos, margen entero, 3-3.5 x 6 mm; lóbulo medio bilobado, los lóbulos bifurcados, rectos, delgados, margen entero, la parte libre de 4 x 1.6 mm. **Columna** recta, delgada, 14-16 mm de largo. **Clinandrio** reducido, entero. **Antera** elipsoide, no ornamentada, 4-locular. **Polinios** 4, tipo ala de pájaro, los interiores más pequeños; caudículas cortas, laminares; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/2 del largo de la cavidad estigmática. **Nectario** apenas sobrepasando el perianto, no ornamentado. **Cápsula** no vista.

Caespitose, epiphyte or lithophyte. **Roots** thin. **Stem** cane-like, terete. **Leaves** distributed throughout the stem, elliptic-lanceolate, acute, dark green. **Inflorescence** apical, from mature growth, flowering only once, paniculate, very large, lax-flowered, several branched, with a long, acute bract at base, followed by sequentially smaller bracts becoming those of the rachis. **Floral bracts** a third as long as ovary, triangular acuminate. **Flowers** numerous, successive (the buds are all the same size when the first flowers open), resupinate, sepals grayish-green inside, dark rose-lilac outside, petals grayish-green, column and lateral lobes of lip rose-lilac, midlobe green, callus pink with apex purple, basal half of keels purple, anther greenish, ovary rose-lilac. **Ovary** dilated and arched near the apex. **Sepals** narrowly ovate-spatulate, acute, concave, 5-veined. **Petals** filiform, 1-veined. **Lip** 3-lobed, fleshy; bicallose, 3-carinate; lateral lobes much larger than midlobe, equally wide between the lateral and midlobe, transversely oblong-rectangular, entire, retrorse; midlobe bilobate, the lobes bifurcate, narrow. **Column** straight, thin. **Clinandrium** reduced, entire. **Pollinia** bird-wing type. **Nectary** penetrating slightly the periant.



OTHER SPECIMENS: COLOMBIA: Antioquia: *Escobar 922* AMES! *López sub Escobar 5168* AMO! (illustration voucher).

OTHER RECORDS: COLOMBIA: Antioquia: *Escobar 922* AMO! (slide)!; *Valdivieso s.n.* AMO! (slide).

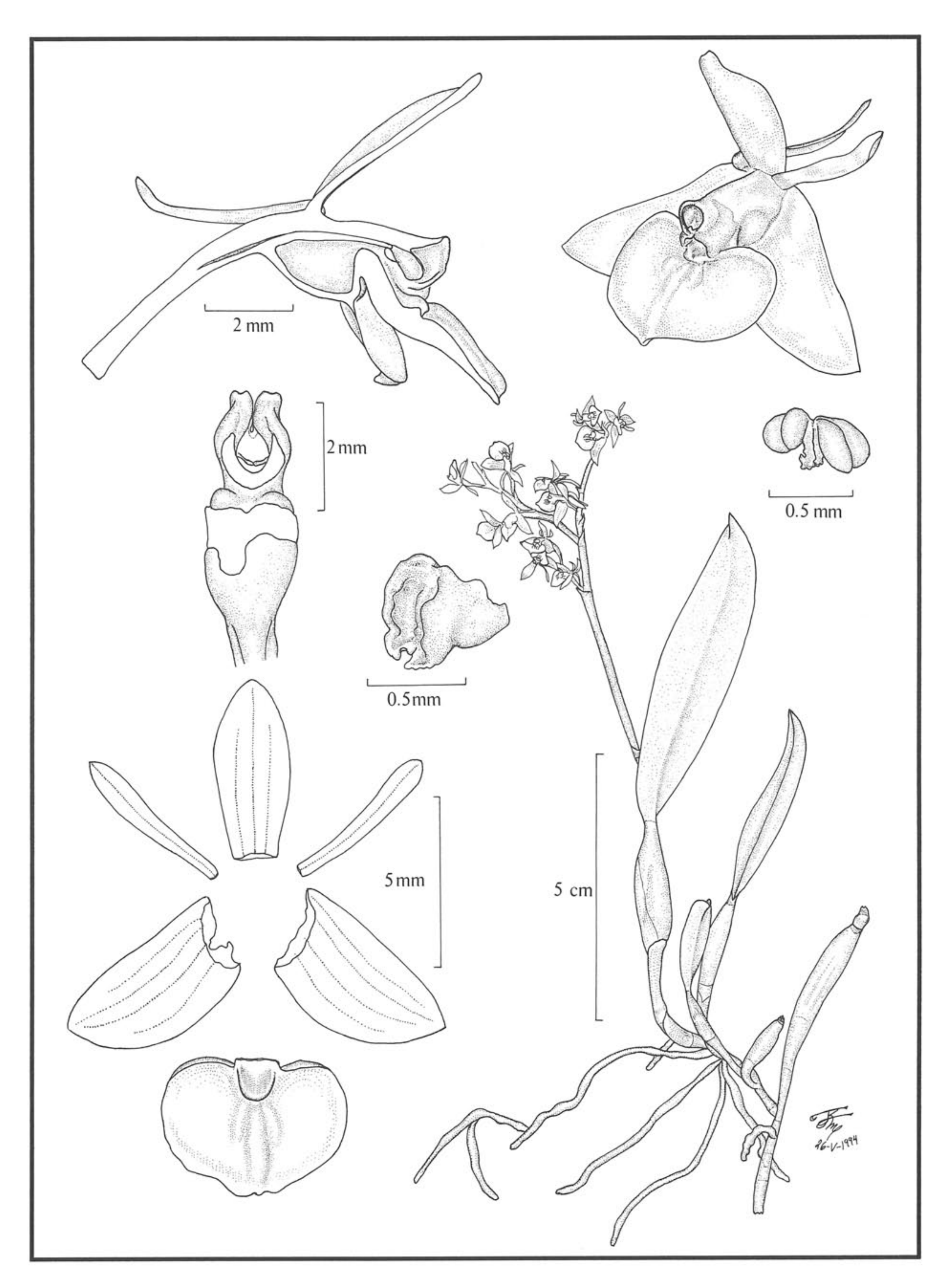
DISTRIBUTION AND ECOLOGY: Apparently restricted to the highlands of Antioquia, both north and south of Medellín, at around 2200-2500 m altitude. Flowering in December in Medellín, April-May and December in cultivation in Mexico.

RECOGNITION: *E. lopezii* belongs to the *E. paniculatum* group and is recognized by its large, lax-flowered panicle, sepals 17-19 mm long, the flowers grayish inside, pinkish outside, the disk of the lip green with purple callus; the lateral lobes of the lip are oblong-rectangular and strongly retrorse, parallel to the column. It is similar to *E. peraltum* Schltr., a widespread species found from southern Colombia to Bolivia, which has smaller flowers (sepals 11-13 mm long) and the lateral lobes with irregular margin and divergent, spreading, not parallel to the column.

ETYMOLOGY: In Honor of Francisco "Pacho" López, a gardener at Colomborquídeas near Medellín, who collected the type specimen.

REFERENCES: Escobar, R. 1994. **Orquídeas Nativas de Colombia**, vol. 5, Medellín, p. 762, photograph 881.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM LUMBAQUIENSE Hágsater & Dodson

Plate 349

EPIDENDRUM LUMBAQUIENSE Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Napo, Near Lumbaqui on road Baeza to Lago Agrio, 800 m. Hort. Río Palenque Science Center, 20 Sep. 1986, ***A. Embree 98*** RPSC. Clonotypes: ***sub E. Hágsater 10851*** 18 May 1998 AMES! AMO!(illustration voucher, spirit).

Epidendro compressibulbo D.E. Benn. & Christenson simile sed labello unicalloso disciformi, columna tenui recta, nectario inflato post perianthum, vesicam prominentem facienti, ad medium columnae strangulato.

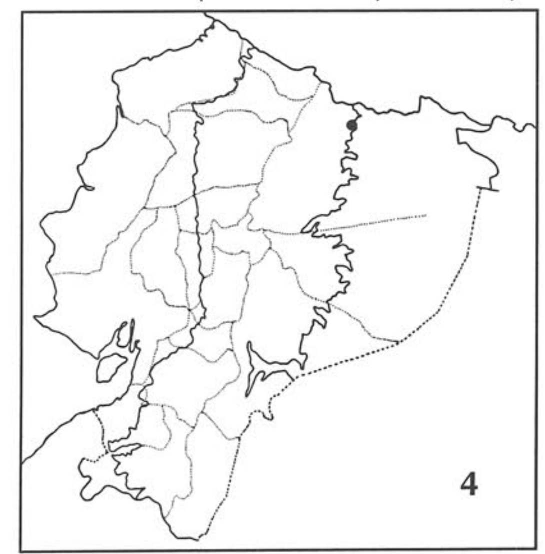
Hierba epífita, rizomatosa, 12-36 cm de alto. **Raíces** basales, carnosas, gruesas, 1-2 mm de grosor. **Tallos** sencillos, donde cada tallo nuevo se origina del 4º entrenudo del tallo anterior, engrosados formando un seudobulbo lateralmente comprimido, sulcado, de color verde muy oscuro, brillante, parcialmente cubierto cuando joven por una vaina escariosa, 2-4.5 x 0.6-0.8 cm. **Hojas** 1-2, en el ápice del seudobulbo, articuladas, angostamente elípticas, obtusas, margen entero, coriáceas, lisas, verdes, 4.2-7.2 x 0.7-1.4 cm. **Espata** 1, muy pequeña, ancipitosa, 0.7-1 cm de largo. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, una panícula, erecta, 9-30 cm de largo; pedúnculo lateralmente comprimido en la base, no ornamentado; bráctea del pedúnculo una, semejante a las florales, corta, aguda, 2 mm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, 2-3 mm de largo. **Flores** 3-50, simultáneas, resupinadas, verdes, ligeramente teñidas de rosado a morado hacia el ápice de los segmentos y la columna, antera blanca, fragancia diurna y nocturna, dulce, mielosa. **Ovario** terete, conspícuamente inflado ventralmente detrás de los sépalos laterales, 6-7 mm de largo. **Sépalos** entreabiertos, libres, quilla dorsal inconspícua en los laterales, glabros, membranáceos. **Sépalo dorsal** angostamente obovado, redondeado, margen extendido, 3-nervado, 5 x 2 mm. **Sépalos laterales** elíptico-ovados, oblicuos, obtusos, margen extendido, 4-nervados, 5.5 x 3 mm. **Pétalos** reflexos y arqueados hacia adelante, oblanceolados, obtusos, margen extendido, membranáceos, 1-nervados, 5 x 0.4 mm. **Labelo** unido a la columna, entero, anchamente ovado, redondeado, apiculado, margen entero, carnoso, ligeramente convexo, 4 x 5 mm; unicalloso, callo laminar; tricarinado, las carinas muy bajas, romas. **Columna** recta, dilatada en la base por el nectario inflado, 3 mm de largo. **Clinandrio** corto, algo cónico, dilatado, entero. **Antera** ovada, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad. **Nectario** penetrando 1/3 del ovario, formando una vesícula muy amplia a la altura de los sépalos laterales y casi estrangulada a la mitad de la columna por un pliege carnoso del labelo, no ornamentado. **Cápsula** no vista.

Rhizomatous epiphytic **herb**. **Stems** forming a creeping rhizome, then thickened into a laterally flattened pseudobulb. **Leaves,** 1-2, at the apex of the pseudobulb, coriaceous. **Spathe** small. **Inflorescence** apical, a panicle, flowers only once; peduncle laterally compressed. **Floral bracts** very short, acuminate. **Flowers** 3-50, simultaneous, resupinate, green with pink to purple tinge near the apex of the segments, sweet-scented.**Ovary** thin, swollen into a conspicuous vesicle behind the lateral sepals, constricted at the middle of the column. **Dorsal sepal** narrowly obovate, rounded, 3-veined. **Lateral sepals** elliptic-ovate, oblique, obtuse, 4-veined. **Petals** oblanceolate, obtuse, 1-veined. **Lip** entire, widely ovate, rounded, apiculate; unicallose, callus laminar; tricarinate, very low, rounded, running down the middle of the lip. **Column** straight, dilated at the base by the inflated nectary. **Clinandrium** short, somewhat conical, entire. **Nectary** forming a large vesicle at the lateral sepals, with a transverse ridge almost closing the entry behind at the middle of the column, unornamented.

OTHER SPECIMEN: ECUADOR: Napo; Near Lumbaqui on road Baeza to Lago Agrio, *Embree 84 sub Dodson 18026* RPSC!

DISTRIBUTION AND ECOLOGY: Known only from the type locality, at 800 m altitude. Flowering in Ecuador in cultivation in February and September, in Mexico in May-June.

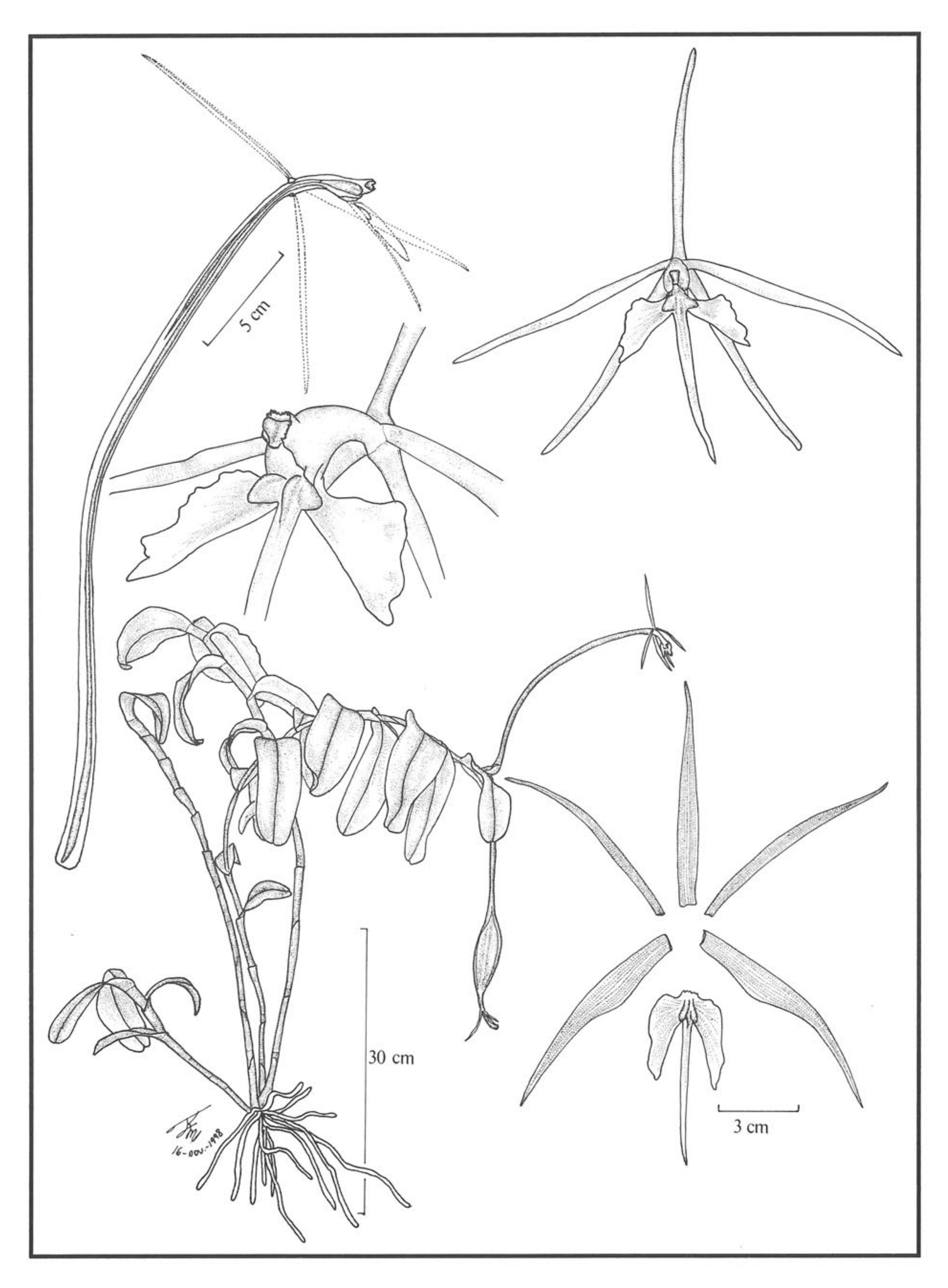
RECOGNITION: *Epidendrum lumbaquiense* is easily recognized by the laterally flattened pseudobulbs on a creeping rhizome, 1-2 leaved at the apex, the single, very small spathe at the base of the large paniculate inflorescence with small, green, sweet-smelling flowers with a widely ovate lip, and a single, dish-like callus, the nectary swollen into a large vesicle at the lateral sepals. The species is very similar to *Epidendrum compressibulbum* which can be recognized by its 3-dentate callus, each prolonged into a short keel on the disc of the lip, the arched column and the thin ovary which is barely thickened behind the lateral sepals.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the town of Lumbaqui, near to which the species was collected.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MACROOPHORUM Hágsater & Dodson

Plate 350

EPIDENDRUM MACROOPHORUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Carchi: Tulcán, km 79.2 camino Tulcán-Maldonado, 0°47'N 77°56'W, 1540 m, 29 Apr. 1993, ***E. Hágsater et al. 11373*** QCNE! Isotypes: AMOx2! COL! MO! SEL!

Epidendro latifolio (Lindl.) Garay & Sweet simile sed ovario longiore, foliis 3-4-plo longioribus quam latioribus.

Hierba epífita o litófita, cespitosa, 30-128 cm de alto. **Raíces** basales, 3-4 mm de grosor. **Tallos** sencillos, totalmente cubiertos por las vainas cuando joven, lateralmente comprimidos hacia el ápice, teretes en la base, rectos, 25-106 x 0.4-1.7 cm. **Hojas** 6-10, distribuidas en la mitad apical del tallo; vaina lateralmente comprimida, 2-5.5 x 0.5-1.7 cm; lámina elíptica a oblonga, retusa, coriácea, ligeramente carinada, 3-4 veces más larga que ancha, 9.5-20 x 2.3-7 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, 0.5-3.5 cm de largo; pedúnculo con 1-4 brácteas iguales a las florales. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, atenuadas a agudas, 6-16 x 6-12 mm. **Flores** 1-5 por racimo,abierta una a la vez, sucesivas, resupinadas, verde cobrizo a pálido, labelo y columna blancos, la columna tornándose rojiza. **Ovario** terete, no ornamentado, 220-280 mm de largo. **Sépalos** extendidos, linear-lanceolados, acuminados, mucronados, margen revoluto, entero, 9-11 nervados, 62-78 x 5-8 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, linear-lanceolados, acuminados, mucronados, margen extendido, entero, 7-nervados, 60-74 x 3-6 mm. **Labelo** unido a la columna, trilobado, 40-56 x 28-38 mm; bicalloso, callos laminares, prominentes; unicarinado, carina formando una tercer lámina entre los callos, evidente, prolongándose desde la base del labelo hasta una tercera parte del lóbulo medio; lóbulos laterales semiovados redondeados, margen entero, 24-30 x 9-12 mm; lóbulo medio linear, acuminado, margen entero, 35-47 x 2-3 mm. **Columna** ligeramente arqueada, delgada en la base, dilatada hacia el ápice, 30-34 mm de largo. **Clinandrio** corto, profunda e irregularmente dentado. **Antera** obovada, formada por dos lomos verticales paralelos, semicirculares, ápice truncado, 4-locular. **Polinios** 4, semiobovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, de longitud ligeramente mayor a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/5 de la longitud de la cavidad estigmática. **Nectario** penetrando todo lo largo del ovario, no ornamentado. **Cápsula** elipsoide, 23.5-28 cm de largo total, pedicelo de 16 cm, ocupando más de la mitad del largo, el cuerpo ocupando la mitad apical, 9 x 2.5 cm, el cuello apical 2 cm de largo.

Caespitose epiphytic or lithophytic **herb**. **Stems** simple, laterally compressed at the apex, terete below. **Leaves** 6-10, distributed towards the apex of the stem; sheaths laterally compressed; blade elliptic to oblong, retuse, coriaceous, 3-4 times longer than broad. **Inflorescence** apical, pluriracemose; peduncle with 1-4 bracts. **Floral bracts** much shorter than the ovary, triangular. **Flowers** 1-5 per raceme, successive, one at a time, resupinate, pale to coppery green, lip and column white, the column turning reddish. **Ovary** terete, ca. 4 times longer than the sepals. **Sepals** spreading, linear-lanceolate, acuminate, mucronate, margin revolute, entire. **Petals** similar but narrower. **Lip** 3-lobed; bicallose, callus laminar, prominent; unicarinate forming a keel between the callus; lateral lobes semiovate, rounded, margin entire; midlobe linear, acuminate. **Column** slightly arched, thin at base, dilated at the apex. **Clinandrium** short, deeply and irregularly dentate. **Nectary** penetrating the whole length of the ovary. **Capsule** ellipsoid, very long, pedicel more than half the entire length, the body occupying the apical half, with a short apical neck.

OTHER SPECIMENS: COLOMBIA: *Fernández 7471* COL! **Valle del Cauca:** *Guarín 14* COL! *Hágsater 7322* AMO! *Hágsater 7373* AMO! *Ortiz 225* HPUJ! **ECUADOR: Bolivar:** *Dodson 69* SEL! *Skiner* K! **Cañar:** *Dodson 39* SEL! *Dodson 271* SEL! **Carchi:** *Dodson 16174* RPSC! *Dodson 19075* RPSC! *Hágsater 11326* AMO! QCNE! (illustration voucher). *Hirtz 5267* QCNE! *Palacios 7313* QCNE! *Thompson 868* CM! SEL! **Cotopaxi:** *Hágsater 7754* AMO! **El Oro:** *Cornejo X 21* GUA! *Dodson 8481* SEL! **Esmeraldas:** *Dodson 10415* SEL! **Guayas:** *Lehmann 6711* AMES! K! **Imbabura:** *Drew E-526* AMES! **Los Rios:** *Dodson 7764* SEL! **Manabí:** *Cornejo X 1278* GUA! **Pichincha:** *Dodson 3716* SEL! *Dodson 15342* RPSC! *Dodson 16353* RPSC! *Heinrichs 777* Gx2! Zx2! *Hirtz 3199* MO! *Hirtz 4530* QCNE! *Holm-Nielsen 18458* AAU! *Holm-Nielsen 24507* AAU! *Holm-Nielsen 24548* AAU! *Játiva 379* UC! *Løjtnant 15691* AAU! *Madison 4056* SEL! *Sauleda 3800* SEL! *Webster 28163* DAV!



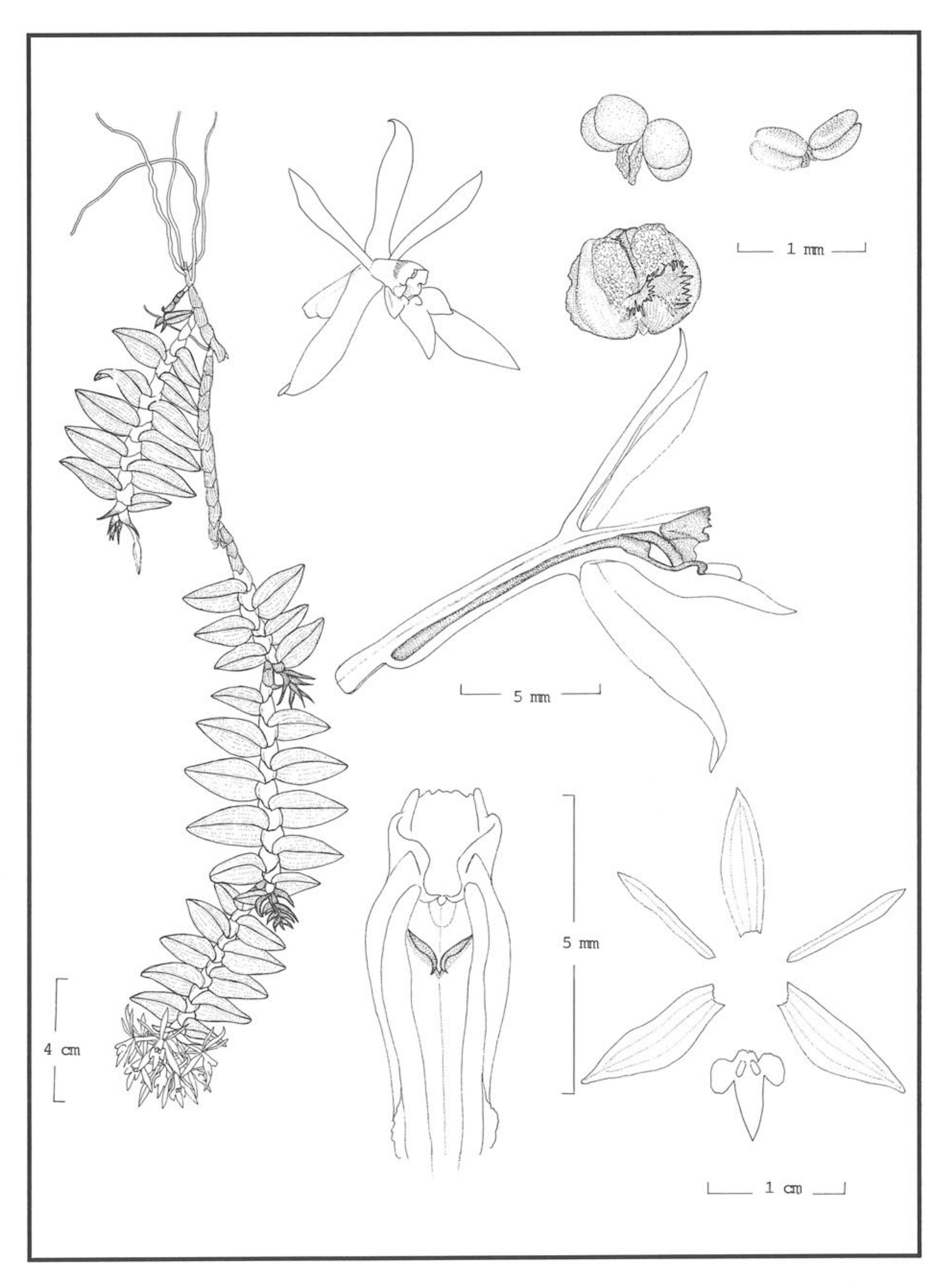
DISTRIBUTION AND ECOLOGY: A common species in wet forest on rocks and trees on the western slopes of the Andes, presently known from southern Colombia and Górgona island, to southern Ecuador, 100-2600 m altitude. Flowering and fruiting throughout the year.

RECOGNITION: *Epidendrum macroophorum* belongs to the *E. nocturnum* Jacq. group and is identified by its very long ovary, the longest of any species in the genus, 23-28 cm long, the fruit being formed at the apical half of the ovary, leaves are 3-4 time longer than broad. *E. latifolium* has a shorter nectary 14-18 cm long and leaves generally 2-3 times longer than broad. *E. carpophorum* Barb. Rodr. and *E. tridens* Poepp. & Endl. have shorter ovaries, about 6-10 cm long. Has been incorrectly labeled *E. tunguraguae* Schltr., a species described from eastern Ecuador with a short ovary.

ETYMOLOGY: From the Greek "μακρος" large, and "ωοθορον" ovary, in reference to the extraordinarily long ovary which characterizes this species.

REFERENCES: Dodson, C. H. & P. M. Dodson. 1980. As *Epidendrum tunguraguae* Schltr. in **Icones Plant. Trop.** 1: t. 97.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MADSENII Hágsater & Dodson

Plate 351

EPIDENDRUM MADSENII Hágsater *et* Dodson, *sp. nov.*,

Holotype: ECUADOR: Tungurahua: km 15 Mera-Baños, above Río Topo, 1220 m, ***E. Hágsater 9192 & C. H. Dodson*** AMO! (illustration voucher).

Epidendro bonitense Hágsater & Dodson simile sed ovario vesicam ventralem versus ovarii basem dilatatam ferenti, clinandrio prominenti 3-lobato margine eroso, lobulo apicali labelli triangulari acuto, anthera antice projecturam laminarem transversalem dentatam ferenti.

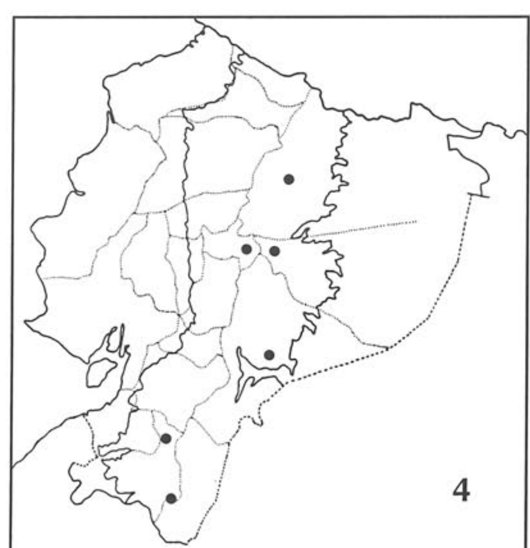
Hierba epífita colgante. **Raíces** basales, filiformes, ca. 0.5 mm de grosor. **Tallos** basales o superpuestos, generalmente de cerca del ápice del tallo anterior, lateralmente comprimidos, 5-19 x 0.25-0.5 cm. **Hojas** distribuidas a lo largo de todo el tallo, equidistantes, articuladas, presentadas en el mismo plano del tallo y perpendiculares a él; vainas cubriendo completamente al tallo, ancipitosas, estriadas cuando secas, hasta 3-11 mm de largo; lámina ovada a ovado-lanceolada, aguda, suculenta, 2.5-4 x 0.8-1.6 cm. **Espata** ausente. **Inflorescencia** apical, colgante, racemosa, subcorimbosa, 2.5-3 cm de largo; pedúnculo con una bráctea, 11-13 mm de largo. **Brácteas florales** ovadas, agudas, dorsalmente carinadas, progresivamente más pequeñas, 3-11 x 3-5 mm. **Flores** 6-9, simultáneas, resupinadas, de color verde claro. **Ovario** inflado ventralmente, formando una vesícula alargada cerca de la base, 8-11 mm de largo. **Sépalos** extendidos, elípticos, agudos, 3-nervados, 9-12 x 3-3.5 mm; los **laterales** ligeramente falcados. **Pétalos** extendidos, lineares, agudos, 1-nervados, 9-11 x 1.5 mm. **Labelo** unido a la columna, carnoso, trilobado, margen entero, 5.5-7 x 5-5.5 mm; bicalloso, los callos basales alargados, divergentes; lóbulos laterales semiovoides, 1.5 x 2.3 mm; lóbulo medio triangular, agudo, del doble de largo que ancho, 4.5-5.5 x 2 mm. **Columna** recta, 5-7 mm de largo. **Clinandrio** prominente, 3-lobado, formando una gran ala alrededor de la antera, sobrepasando ampliamente el cuerpo de la columna, dentado-eroso. **Antera** reniforme, 4-locular, provista al frente de un proceso alado, delgado, transversal, dentado. **Polinios** 4, suborbiculares, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/2 del largo de la cavidad estigmática. **Nectario** penetrando más de 3/4 partes del ovario, dilatado hacia la base y formando una vesícula. **Cápsula** no vista.

Branching, pendent, epiphytic **herb**. **Stems** laterally compressed, new stems produced from near the apex of the previous stem, or from the middle. **Leaves** articulate; evanescent, imbricating, foliaceous sheaths; blade ovate to ovate-lanceolate, acute, succulent. **Inflorescence** apical, racemose, subcorymbose, with an intermediate bract between the leaves and the floral bracts. **Flowers** 6-9, simultaneous, light green. **Ovary** clearly inflated at the base to form a vesicle. **Sepals** elliptic, acute, 3-veined. **Petals** linear, 1-veined. **Lip** 3-lobed, fleshy; callus basal, divergent; lateral lobes semiovoid; midlobe triangular, acute, twice as long as wide. **Column** straight. **Clinandrium** prominent, 3-lobed, dentate-erose. **Anther** reniform, 4-celled, provided with a transverse, dentate process in front. **Nectary** penetrating more than 3/4 of the ovary and inflated basally to form a vesicle.

OTHER SPECIMENS: ECUADOR: Napo: Cosanga, *Hirtz 1552* AMO! Tena-Baeza, *Hirtz 1676* AMO! **Morona-Santiago:** Campamento Guarumales, *Luer 15246 et al.* AMO! QCNE! SEL! **Tungurahua:** Río Negro, *Asplund 19372* S! Mera, *Asplund 19129* S! Río Topo, *Dodson 2001 & Thien* RPSC! Río Negro, *Dodson 2329 & Thien* RPSC! Mera, *Harling 3216* S! Río Topo, *Hirtz 1423* AMO! Río Topo, *Hirtz 1783* RPSC! Río Estancias near Río Topo, *Lugo 627* GB! **Zamora:** El Retorno, *Dalessandro 458* RPSC!

DISTRIBUTION AND ECOLOGY: Eastern slope of the Andes at 1100-2000 m altitude, growing on *Crescentia cujete* and other trees in forests and along rivers. Flowering from November to May.

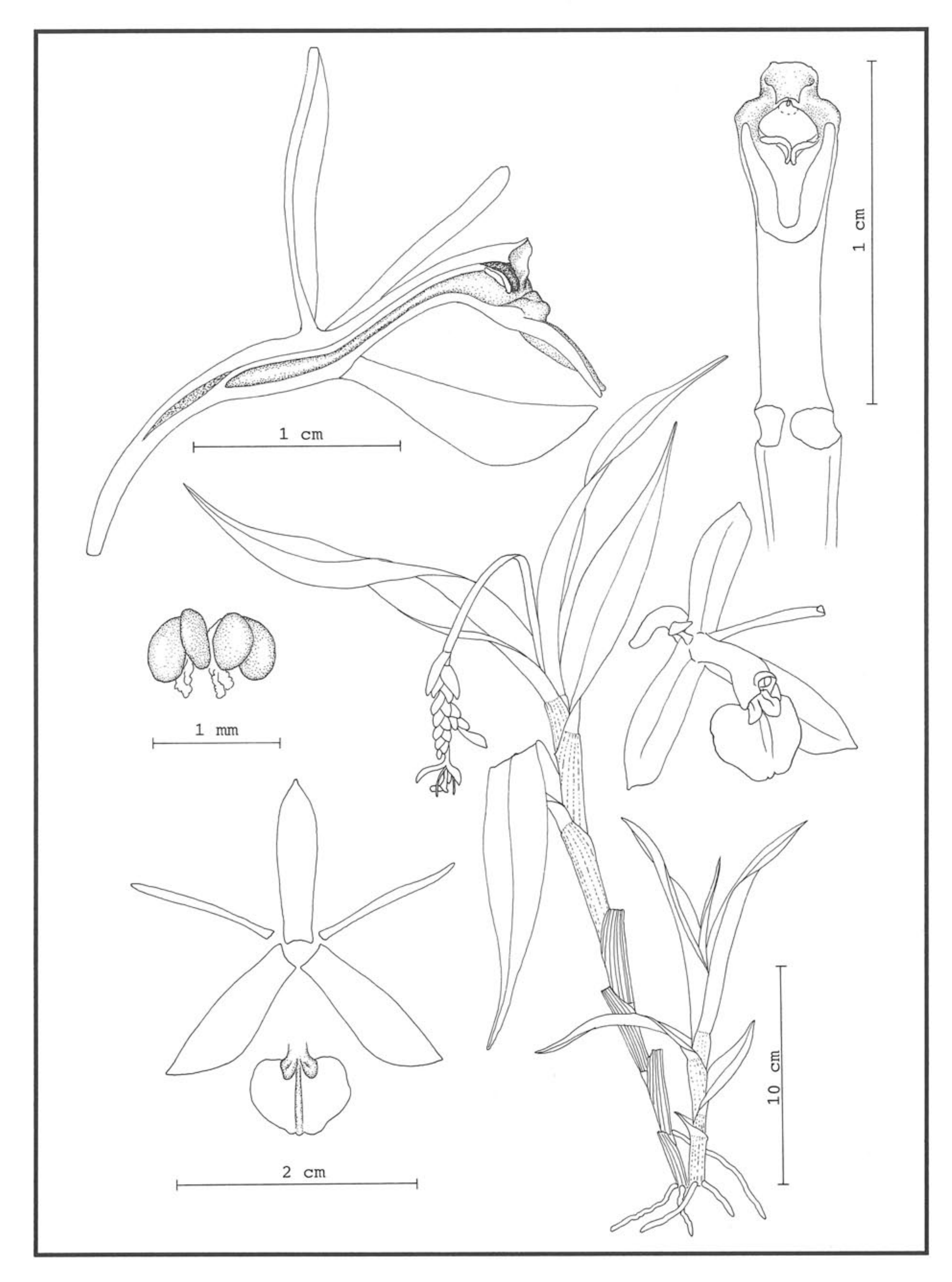
RECOGNITION: *Epidendrum madsenii* belongs to the *Epidendrum nanum* C. Schweinf. group, and is recognized by the prominent, very long swollen vesicle at the base of the ovary, nearly as long as the ovary itself, the pale green flowers, the prominent 3-lobed, erose clinandrium, the triangular, acute midlobe of the lip, and the ornamentation of the anther consisting of a transverse, dentate process in front. It closely resembles *Epidendrum lueri* Dodson & Hágsater, which has pinkish yellow flowers with a bright yellow lip, a denticulate clinandrium neither 3-lobed nor fimbriate. *Epidendrum bonitense* has a shorter nectary which is only half as long as the base of the ovary and does not form a vesicle, the clinandrium barely reaches the apex of the body of the column, and the sepals are 4-5-veined, the midlobe of the lip is short-subquadrate and obtuse. *Epidendrum macasense* Hágsater & Dodson is distinguished by its shorter, narrower leaves, the narrower petals, the unornamented anther, and the ovary which is not inflated or swollen into a vesicle. *Epidendrum milenae* Dodson & Vásquez has a purple anther and dentate, 3-lobed clinandrium, the lateral lobes of the lip being barely separated from the midlobe, the flowers smaller, sepals 3.5-4 mm long.



CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: In honor of Jens E. Madsen, collector with the Danish expedition of Aarhus who participated in the collection of specimens of this group of species.

Authors: E. Hágsater & C. H. Dodson Illustrator: R. Jiménez M. Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM MADUROI Hágsater & García-Cruz — **Plate 352**

EPIDENDRUM MADUROI Hágsater et García-Cruz, *sp. nov.*

Holotype: PANAMA: Chiriquí: Norte de Guadalupe, Cerro Punta, Volcán Barú, 2000-3000 m, col. 15 Mar. 1981, pressed 22 Feb. 1983, ***E. Hágsater 6468 & R. L. Dressler*** AMO! (illustration voucher). Isotype: MO! Clonotype: 8 Feb. 1984 PMA!

Epidendro lankesteri Ames simile sed sepalis petalisque aereis, labello et columnae apice pomaceo-viridi, labello subreniformi ad basim truncato 6-8 mm lato, columna arcuata et clinandrio brevi, recedit.

Hierba epífita, cespitosa, erecta, 40-55 cm de alto. **Raíces** basales, carnosas, de 1-2 mm de grosor. **Tallos** sencillos, tipo caña, rectos, teretes en la base, ancipitosos hacia el ápice, 20-30 x 0.3-1.1 cm. **Hojas** 5-9, distribuidas a lo largo del tallo; vaina tubular, estriada, 30-71 mm de largo; lámina linear-lanceolada, largamente acuminada, angostamente cuneadas hacia la base, 12-23 x 1.3-2.9 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, erecta a arqueada, pudiendo florecer varias veces del mismo pedúnculo, 12-20 cm de largo; pedúnculo largo, ancipitoso, bialado, las alas prominentes a todo lo largo del pedúnculo, 5-10 cm de largo; brácteas del racimo 1-2, oblongo-triangulares, agudas, conduplicadas, 1-3.1 x 0.8-1.1 cm. **Brácteas florales** más cortas que el ovario, conduplicadas, ovado-elípticas, obtusas, ligeramente mucronadas, imbricadas, cubriendo completamente al raquis, persistentes sin flores, 5-14 x 3.5-13 mm. **Flores** 5-15 por racimo, sucesivas, 1-2 abiertas a la vez, resupinadas, sépalos y pétalos bronceado-verdosos, ápice de la columna y labelo verde manzana, callos más claros. **Ovario** terete, no ornamentado, ligeramente inflado en el tercio apical, 12-15 x 1-1.5 mm de grosor. **Sépalos** entreabiertos a extendidos, oblongo-elípticos, agudos, margen extendido, 5-nervados, 13-15 x 2.5-3 mm; los **laterales** oblicuos, 12-14 x 3.5-4 mm. **Pétalos** entreabiertos, lineares, agudos, margen extendido, 1-nervados, 12-13 x ca. 0.5 mm. **Labelo** unido a la columna, entero, aspecto general subreniforme, base truncada, ápice obtuso a redondeado, con un seno pequeño en el ápice, cortamente apiculado, margen entero, 5-6 x 6-8 mm; bicalloso, callos lateralmente comprimidos, carnosos, prominentes; disco unicarinado, carina poco evidente, prolongándose desde el frente de la columna hasta el ápice de la lámina del labelo. **Columna** arqueada, tubular, 9-11 mm de largo. **Clinandrio** corto, entero a eroso. **Antera** semiovada, 4-locular. **Polinios** 4, obovoides, subiguales; caudículas suaves y ganulosas, ligeramente más largas que los polinios; viscidio no visto. **Rostelo** hendido, subapical, elíptico. **Lóbulos laterales del estigma** cubriendo casi toda la cavidad estigmática. **Nectario** penetrando 1/3 de la longitud del ovario, no ornamentado. **Cápsula** elipsoide, púrpura, 3.3 x 1.1 cm, pedicelo delgado corto, 1.7 cm de largo, cuello apical corto, 4 mm de largo.

Epiphytic, caespitose **herb**. **Stem** simple, cane-like, ancipitous toward the apex. **Leaves** distributed throughout the stem; sheath tubular, striate; blade linear-lanceolate, acuminate, narrowly cuneate at the base. **Inflorescence** apical, pluriracemose, straight to arcute, flowering some times from the same peduncle; peduncle long, ancipitous, bialate. **Floral bracts** shorter than the ovary, conduplicate, ovate-elliptic, obtuse, imbricate, hiding the rachis, persistent without flowers. **Flowers** 5-15 per raceme, succesive, 1-2 open at a time, resupinate, sepals and petals bronze-greenish, lip and apex of column apple-green. **Ovary** terete, unornamented, slightly inflated at the apical third. **Sepals** partly open to spreading, oblong-elliptic, acute, 5-veined. **Petals** slightly open, linear, acute, 1-veined. **Lip** entire, subreniform, base truncate, apex obtuse to rounded, with small sinus, shortly apiculate, margin entire; bicallose, callus laterally compressed, prominent; disc unicarinate, keel slightly prominent, throughout the lip. **Column** tubular, arcuate. **Clinandrium** short, entire to erose. **Anther** semiovoid, 4-celled. **Pollinia** 4, obovoid, subequal; caudicles soft and granulose, longer than the ovary. **Nectary** penetrating 1/3 of the ovary, not ornamented.

OTHER SPECIMES: PANAMA: Chiriquí: *Maduro sub OIC 3091* SEL! *van der Werff 6444 & Herrera* SEL!

OTHER RECORDS: PANAMÁ: Chiriquí: Cerro Punta, *Hágsater 6468 & Dressle* AMO! (in spirit).

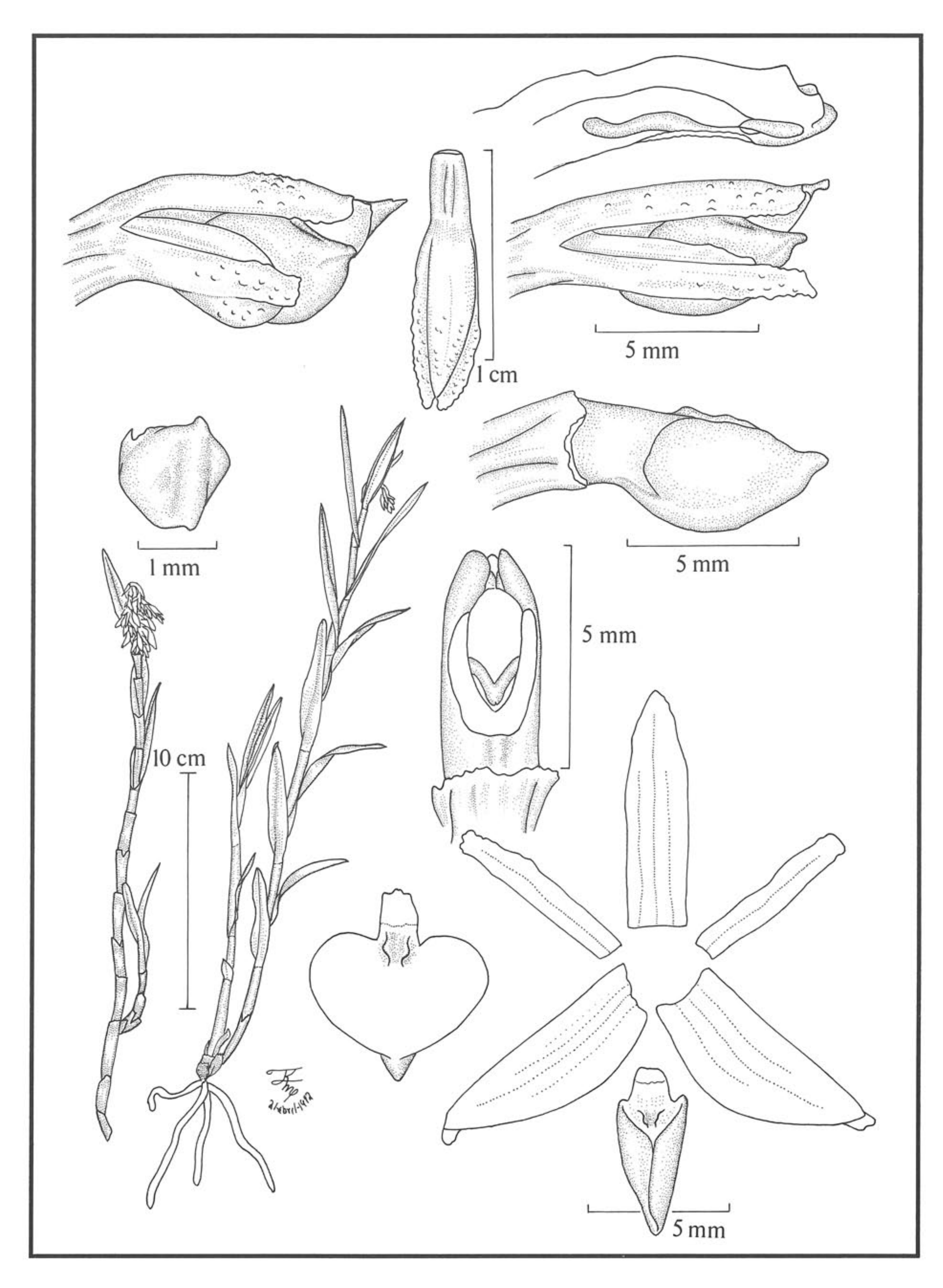
DISTRIBUTION AND ECOLOGY: Known only from the type locality, growing in cloud forest, between 2000 to 3000 m altitude. Flowering in February, probably throughout the year, since the flowers are successive.

RECOGNITION: *Epidendrum maduroi* can be recognized by its sepals and petals bronze-green, the apple-green and subreniform lip, 6-8 mm wide, the arcuate column and short clinandrium. *Epidendrum lankesteri* has a subrounded to subovate lip, slightly lobulate toward the basal half, 4 mm wide, straight column and prominent clinandrium. *Epidendrum adnatum* Ames & C. Schweinf. has narrower leaves and floral bracts, ovate, acute lip ca. 4 mm wide, disc 3-carinate and with a prominent clinandrium. *Epidendrum jefeallenii* Hágsater & García-Cruz has narrower leaves and floral bracts, and a cordiform, emarginate lip.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Dedicated to Andrés Maduro, orchid amateur in Panama with a property in Guadalupe Chiriquí, where he grows orchids and where the collectors were based when collecting the type.



EPIDENDRUM MELANOTRICHOIDES Hágsater & Dodson

Plate 353

EPIDENDRUM MELANOTRICHOIDES Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Napo: NE facing ridge on the N side of Cerro Sumaco, virgin moist paramo, 3600-3700 m, 24 Apr. 1979, ***B. Løjtnant 12710 & U. Molau*** AAU! (illustration voucher). Isotypes: AAU! GB!

Epidendro frigido Lindl. simile sed foliis minoribus, labello late cordiformi, floribus flavido-viridibus.

Hierba terrestre o epífita, cespitosa, 15-38 cm de alto. **Raíces** carnosas, gruesas, basales, 2-5 mm de grosor. **Tallos** erectos, ocasionalmente ramificados cuando maduros, tipo caña, 12-33 cm de largo. **Hojas** numerosas, distribuidas a lo largo del tallo, suberectas; vaina tubular, finamente rugulosa, 1-3 x 0.2-0.4 cm; lámina angostamente lanceolada, aguda, margen entero, extendido, 2.5-7.5 x 0.5-0.9 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, racemosa, arqueado colgante, puede producir racimos sucesivos cuando aún está en floración el anterior, 2.5-7 cm de largo; pedúnculo corto, arqueado bruscamente arriba de la primer bráctea floral, ca. 2 cm de largo. **Brácteas florales** más largas que el ovario, progresivamente más cortas, ovado triangulares a acuminadas, rugulosas, extendidas con respecto del raquis sin llegar a ser perpendiculares, 2-12 mm de largo. **Flores** hasta 20 por racimo, sucesivas, 1-2 abiertas a la vez, desarrollándose poco a poco junto con la inflorescencia, resupinadas, carnosas, verde amarillentas. **Ovario** grueso, no inflado, no ornamentado, 5-6 mm de largo. **Sépalo dorsal** entreabierto, oblongo, obtuso, carnoso, dorsalmente paucimuricado, 3-nervado, 7-8 x 2.5 mm. **Sépalos laterales** entreabiertos, ovados, oblicuos, agudos, fuertemente carinados, carnosos, dorsalmente paucimuricados, 3-nervados, 7-9 x 3 mm. **Pétalos** entreabiertos, adpresos a los sépalos laterales, rectos, angostamente oblongos, truncados, margen eroso, 1-nervados, 6 x 1 mm. **Labelo** unido a la columna, entero, anchamente cordiforme, mucronado, carnoso, se puede extender una vez rehidratado, en posición natural los lados abrazan el ápice de la columna sin encimarse arriba, 5 x 6 mm; unicalloso, el callo en forma de "Y"; sin quillas. **Columna** recta, gruesa, 5 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, carnosa, 4-locular. **Rostelo** apical, hendido. **Nectario** sin traspasar el perianto, no ornamentado. **Cápsula** elipsoide, 23 x 9 mm, pedicelo y cuello muy cortos.

Caespitose terrestrial or epiphyte, occasionally branched. **Roots** fleshy, thick, basal. **Stems** cane-like, terete. **Leaves** numerous, distributed throughout the stem, sheath tubular, rugose; blade narrowly lanceolate, acute, margin entire. **Inflorescence** apical, racemose, nutant, can produce new racemes even when the previous raceme is in flower; peduncle short. **Floral bracts** longer than the ovary, spreading, ovate-triangular to acuminate, rugulose. **Ovary** thick. **Flowers** successive, 1-2 open at one time, developing together with the rachis, resupinate, fleshy, yellowish-green. **Sepals** partly open, somewhat muricate, 3-veined; the **dorsal** oblong, obtuse; the **laterals** obliquely ovate, acute, dorsally keeled. **Petals** adpressed to the lateral sepals, narrowly oblong, truncate, 1-veined. **Lip** entire, widely cordiform, mucronate; callus "Y" shaped. **Column** straight, thick. **Clinandrium** reduced, entire. **Anther** ovoid, fleshy. **Nectary** not surpassing the perianth. **Capsule** ellipsoid, pedicel and neck very short.

OTHER SPECIMENS: ECUADOR: Napo : N facing ridge on the N side of Cerro Sumaco, *Løjtnant 13179 & Molnau* AAU! Cerro Sumaco, *Holm-Nielsen et al. 17629* AAU! QCA! N side of Cerro Sumaco, *Holm-Nielsen et al. 17818* AAU! NY!

DISTRIBUTION AND ECOLOGY: Apparently endemic to the type locality on Cerro Sumaco. Terrestrial or epiphytic on *Blechnum* in shrubby páramo or amongst bryophytes. The flowers are reported as cleistogamous but few capsules are present in the abundant herbarium material, only 1-2 flowers are open at a time, and then they just barely open, but they are not necessarily self-pollinating. At 3450-3700 m altitude. Flowering in May, probably throughout the year.

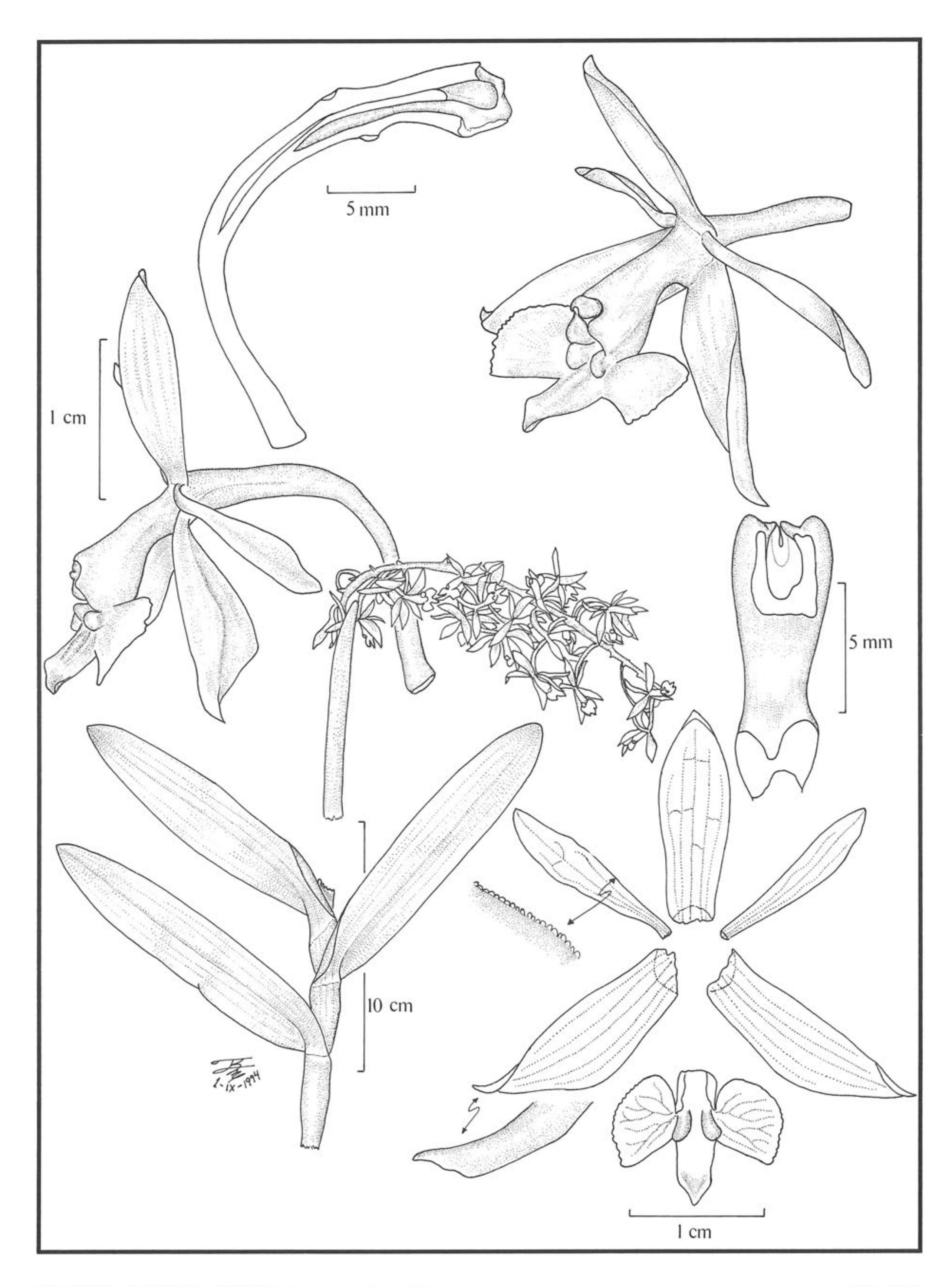
RECOGNITION: This species is closely related to *Epidendrum frigidum*, the lip being widely cordiform. In *E. frigidum* the leaves are much larger, 8-9 cm long, the margin revolute, and the apex abruptly acute, the inflorescence longer with the bracts short and at right angles with the rachis, with pink flowers. *Epidendrum frutex* Rchb. f. has a rhombic lip. There has been much confusion in this group of species, and little detailed work has been done.



CONSERVATION STATUS: Unknown. The habitat where this species is found is quite removed from any human activity, and it would seem unlikely for new settlements to be set up in such a hostile climate.

ETYMOLOGY: From the Greek "*melanos*" black, and "*tricha*" hair and "*oides*", resembling, due to the black hairs that were first observed on the species, but later proved to be the growth of foreign material, probably a fungus, growing on bracts and leaf-sheaths in some parts of the specimens.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MELANOXEROS Hágsater & Dodson

Plate 354

EPIDENDRUM MELANOXEROS Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: [Pichincha:] Valle Lloense, 9000 ft, ***W. Jameson 605*** P! (illustration voucher). Isotypes: E! Px2!

Epidendro klotzschiano Rchb. f. simile sed foliis anguste ellipticiis, spathis obtusis, sepalis 5-nervatis, petalis uninervatis, lóbulo medio labelli ecarinato, apice acuto non truncato, floribus in siccitate denigricatibus.

Hierba epífita o terrestre, cespitosa, 60-150 cm de alto. **Tallo** tipo caña, recto, lateralmente comprimido, sencillo, ca 1.1 cm de grosor. **Hojas** numerosas, equidistantes, probablemente en la mitad apical del tallo; vaina tubular, estriada, finamente rugosa, 3-4.4 cm de largo; lámina angostamente elíptica, redondeada, margen eroso, carinada, 12.5-14.5 x 2.6-2.9 cm. **Espata** 1-2, angosta, obtusa, conduplicada, abierta de un lado en la mitad apical, cubriendo todo el pedúnculo, 5.5-9.2 x 0.7-1 cm. **Inflorescencia** apical, de tallo maduro, florece una sola vez, racemosa, arqueada, nutante, ca. 25 cm de largo; pedúnculo 4-8 cm de largo. **Brácteas florales** mucho más cortas que el ovario, linear-lanceoladas, agudas, 2-4 mm de largo. **Flores** ca. 20, simultáneas, resupinadas, verde amarillentas, al secar se tornan negruzcas en ejemplares prensados. **Ovario** engrosado ligeramente en los 2/3 apicales, terete, no ornamentado, 23-33 mm de largo. **Sépalos** extendidos, libres, oblongo-elípticos, obtusos a agudos, falcados, mucronados, margen extendido, no ornamentados, membranáceos, 5-nervados,14-20 x 5-6 mm. **Pétalos** extendidos, angostos oblanceolados, obtusos, margen extendido, finamente dentado, membranáceos, 3-nervados, 15-16 x 2.5-3 mm. **Labelo** unido a la columna, trilobado, base cordada, 9-11 x 10-13 mm; bicalloso, callos subglobosos; lóbulos laterales dolabriformes, el lado apical recto, margen eroso-dentado, 5 x 6 mm; lóbulo medio oblongo, abruptamente agudo, 5 x 3 mm. **Columna** recta, gruesa, 9-14 mm de largo. **Clinandrio** reducido, entero. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** aparentemente ausentes. **Nectario** apenas traspasando el perianto. **Cápsula** no vista.

Caespitose epiphyte or terrestrial. **Stem** erect, cane-like, laterally compressed. **Leaves** numerous, narrowly elliptic, rounded, margin fleshy-erose. **Spathe** narrow, obtuse. **Inflorescence** apical, racemose, arcuate, nutant, flowering only once. **Flowers** ca. 20, simultaneous, resupinate, greenish yellow, turning black in pressed specimens. **Ovary** somewhat thickened apically. **Sepals** oblong-elliptic, obtuse to acute, 5-veined. **Petals** narrowly oblanceolate, obtuse, margin finely dentate, 3-veined. **Lip** 3-lobed, cordate at the base; bicallose, callus subglobose; lateral lobes dolabriform, margin erose-dentate; midlobe oblong, abruptly acute. **Column** straight. **Clinandrium** reduced, entire. **Rostellum** apical, slit. **Lateral stigma lobes** apparently lacking. **Nectary** somewhat surpassing the perianth.

OTHER SPECIMENS: COLOMBIA: Cundinamarca: Páramo de Chipaque, *Schultes 1050* AMESx2! K! Caupa, subida a la Peña de Sumagá, *Uribe 5906* NY! US! **Cauca:** Cordillera Central, vert. occ. cabeceras del Río Palo, Quebrada de Santo Domingo, *Cuatrecasas 19245* AMES! NY! **ECUADOR: Napo:** Quito-Baeza, *Dodson 17202 & Chase* QCNE! RPSC! **Pichincha:** Valley of Lloa, *Jamieson 38* W! "Peru", without collector *56* W!

DISTRIBUTION AND ECOLOGY: Apparently widespread in the páramos of the inter-Andean valley from north of Bogotá to Quito, between 2950 and 3200 m altitude. Flowering reported from May to December.

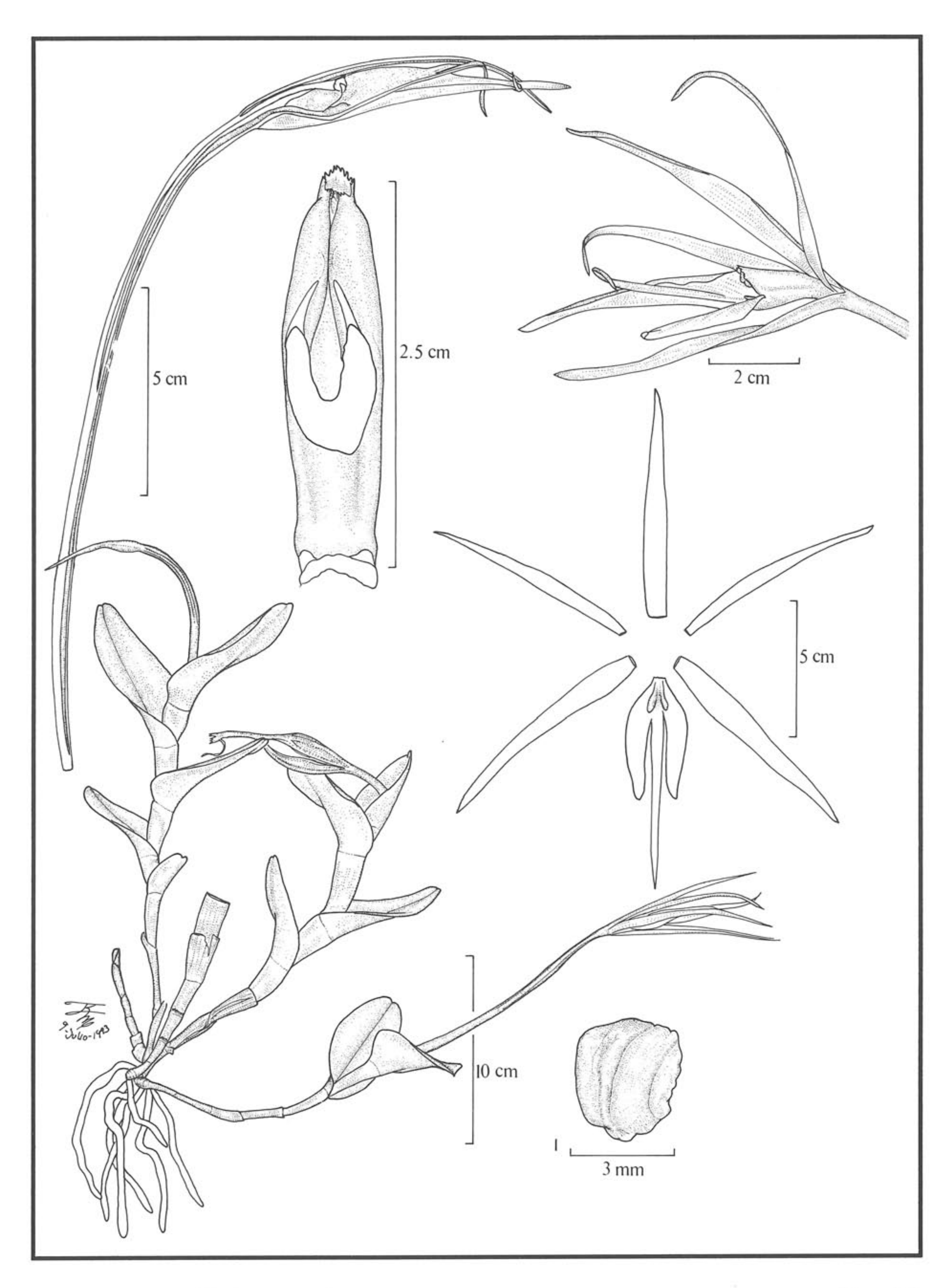
RECOGNITION: *Epidendrum melanoxeros* forms large caespitose plants with leaves distributed throughout, apical, nutant, racemose inflorescence with a narrow, conduplicate spathe, its apex obtuse, blunt, lip 3-lobed, sepals 5-veined, petals 1-veined, and greenish yellow flowers which dry black when pressed. It is closely related to *E. klotzscheanum* which has lanceolate, acute leaves, 2-3 spathes which are much larger and very acute, sepals 7-venied, petals 5-veined, and the midlobe of the lip truncate and fleshy carinate; flowers dry brown when pressed. *Epidendrum ampliracemum* C. Schweinf. although having similar flowers, has few large, wide, rounded leaves, and an erect raceme with only a very small spathe at the base.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*melanos*", black and "*xeros*" dry, in reference to the flowers turning black, a feature which easily separates pressed material of this species from that of *E. klotzscheanum*.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MESOCARPUM Hágsater

Plate 355

EPIDENDRUM MESOCARPUM Hágsater, *sp. nov.*

Holotype: MÉXICO: Chiapas; Ocosingo, ca. 10 km al E de Tani Perla, 950-1000 m, pressed 20 Nov. 1994, ***M. A. Soto 5582 & E. Martínez*** AMO! (illustration voucher). Isotype: SEL! Clonotypes: 6 May 1998 AMES! 7 July 1998 K!

Epidendro latifolio (Lindl.) Garay & Sweet simile sed caulibus brevioribus, foliis angustioribus aliquantum concavis et erectis in caulis dimidio apicali distributis, fructu corpore versus suum dimidium locato, pedicello rostroque longo.

Hierba epífita, cespitosa, 12-28 cm de alto. **Raíces** basales, carnosas, 2.5-5 mm de grosor. **Tallos** sencillos, ancipitosos, algo flexuosos arriba, 8-21 x 0.4-2.2 cm; cubierto por 2 **vainas** tubulares, ancipitosas, escariosas, 1-2.5 cm de largo. **Hojas** 3-5, distribuidas en la mitad apical del tallo, coriáceas; vaina lateralmente comprimida, 25-35 x 6-22 mm; lámina ovada, ápice bilobado, carinadas, 2.5-10 x 2-5 cm. **Espata** ausente. **Inflorescencia** apical, oculta dentro de la vaina de la hoja apical, pluriracemosa, produce una flor a la vez y florece durante varios años. **Bráctea floral** mucho más corta que el ovario, abrazadora, triangular, aguda, 10 x 10-15 mm. **Ovario** terete, 14-16 cm de largo, 3.5-4 mm de grosor. **Flores** una a la vez, (cuando hay dos, de racimos diferentes), sucesivas, resupinadas, en ocasiones cleistógamas, verde-amarillentas, los sépalos en ocasiones amoratados por el envés, labelo blanco, los callos amarillo pálido, columna blanca, la base verdosa. **Sépalos** extendidos, linear-lanceolados, agudos, margen revoluto, entero, 60-75 x 9-11 mm. **Pétalos** extendidos, linear-lanceolados, acuminados, margen revoluto, entero, 54-70 x 6.5 mm. **Labelo** unido a la columna, trilobado, 45 x 25 mm; bicalloso, callos laminares, prominentes; unicarinado, la carina reducida, apenas sobrepasando los callos; lóbulos laterales oblicuos lanceolados, obtusos, enteros, mucho más cortos que el lóbulo medio, 22 x 8 mm; lóbulo medio linear-lanceolado, acuminado, entero, 36 x 7 mm. **Columna** ligeramente arqueada, 25 mm de largo. **Clinandrio** prominente, tridentado. **Antera** 4-locular. **Polinios** 4, obovoide-triangulares, lateralmente comprimidos, los interiores algo menores que los exteriores; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando casi todo lo largo del ovario. **Cápsula** elipsoide, cuerpo 45 x 20 mm, pedicelo de 70 x 4 mm, cuello de 30 x 4 mm.

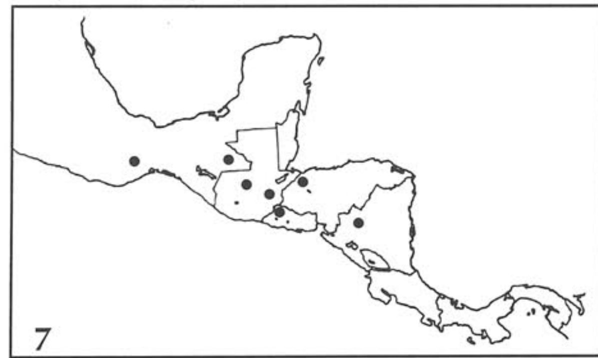
Caespitose epiphyte. **Stems** ancipitose, short, somewhat flexuous above. **Leaves** 3-5, distributed throughout the apical half of the stem, ovate, apex bilobed, somewhat concave and upright, about twice as long as wide or wider. **Inflorescence** apical, hidden within the sheath of the apical leaf, pluriracemose, flowering over several years. **Ovary** 14-16 cm long. **Flowers** successive, one at time, occasionally cleistogamous, sepals and petals yellowish green, the sepals sometimes tinged purple outside, lip white, callus faint yellow, column white, the base greenish. **Sepals** linear-lanceolate, acute. **Petals** linear-lanceolate, acuminate. **Lip** 3-lobed, bicallose, callus lamellate; lateral lobes obliquely lanceolate, obtuse, much shorter than the linear-lanceolate midlobe. **Column** slightly arched. **Clinandrium** prominent, tridentate. **Capsule** ellipsoidal, the body beyond the middle, pedicel nearly twice as long as the apical neck.

OTHER SPECIMENS: EL SALVADOR: Santa Ana: *Hamer 579* SEL! **GUATEMALA: Baja Verapaz**: *Smith sub von Türckheim 1300* BR! **Zacapa**: *Steyermark 42334* AMES! F! **HONDURAS: Cortéz:** *Mathews sub SEL 20-74-185* SELx2! **Morazán:** *Standley & Williams 1424* F! **MEXICO: Chiapas:** *Dressler 1528* AMES! MEXU! **Oaxaca:** *Salazar 5704* AMO! TEX. **NICARAGUA: Matagalpa:** *Grijalva 3899* SEL! *Moreno 17672* SEL!

OTHER RECORDS: MEXICO: Oaxaca: *Pollard s.n.* AMO (slides)! *Pollard R-31* AMO (slide of capsule)! *Suárez 141 sub Hágsater 5228* AMO (slides & illustration)! **NICARAGUA: Jinotega:** *Stevens & Montiel 17837* MO, cited by Hamer (1982) [said to be illustration voucher of IPT 709, however, the plant habit and cross-section of the column are taken from the illustration by *Heller 9257*]. **Matagalpa**: *Heller 9257* AMO (xerox of illustration and description)!

DISTRIBUTION AND ECOLOGY: México (Oaxaca and Chiapas), Guatemala, El Salvador, Honduras and Nicaragua. Between 950-2000 m altitude, often in pine and oak forests. Flowering June, August, November, frequently cleistogamous.

RECOGNITION: *Epidendrum mesocarpum* is closely related to *E. latifolium* and *E. nocturnum* Jacq., and can be recognized by the comparatively short, ancipitous stems, leaves about 5 cm wide, distributed along the apical half of the stem, the ovary longer than the leaves, (10) 14-16 cm long, and the capsule with very long pedicel and apical neck, the former longer, the body proper only occupying about 1/3 of the length and located slightly beyond the middle of the length. *Epidendrum nocturnum,* the only other species found in northern Middle America, has a short ovary, shorter than the leaves, with the body of the capsule occupying nearly its entire length. *Epidendrum latifolium*, found on the Antilles, as well as in Costa Rica and Panama, also has wide leaves, but these are flat and not cupped, and aggregate towards the end of the tall stems, the body of the capsule is located towards the end of the pedicel, with a very short apical neck.



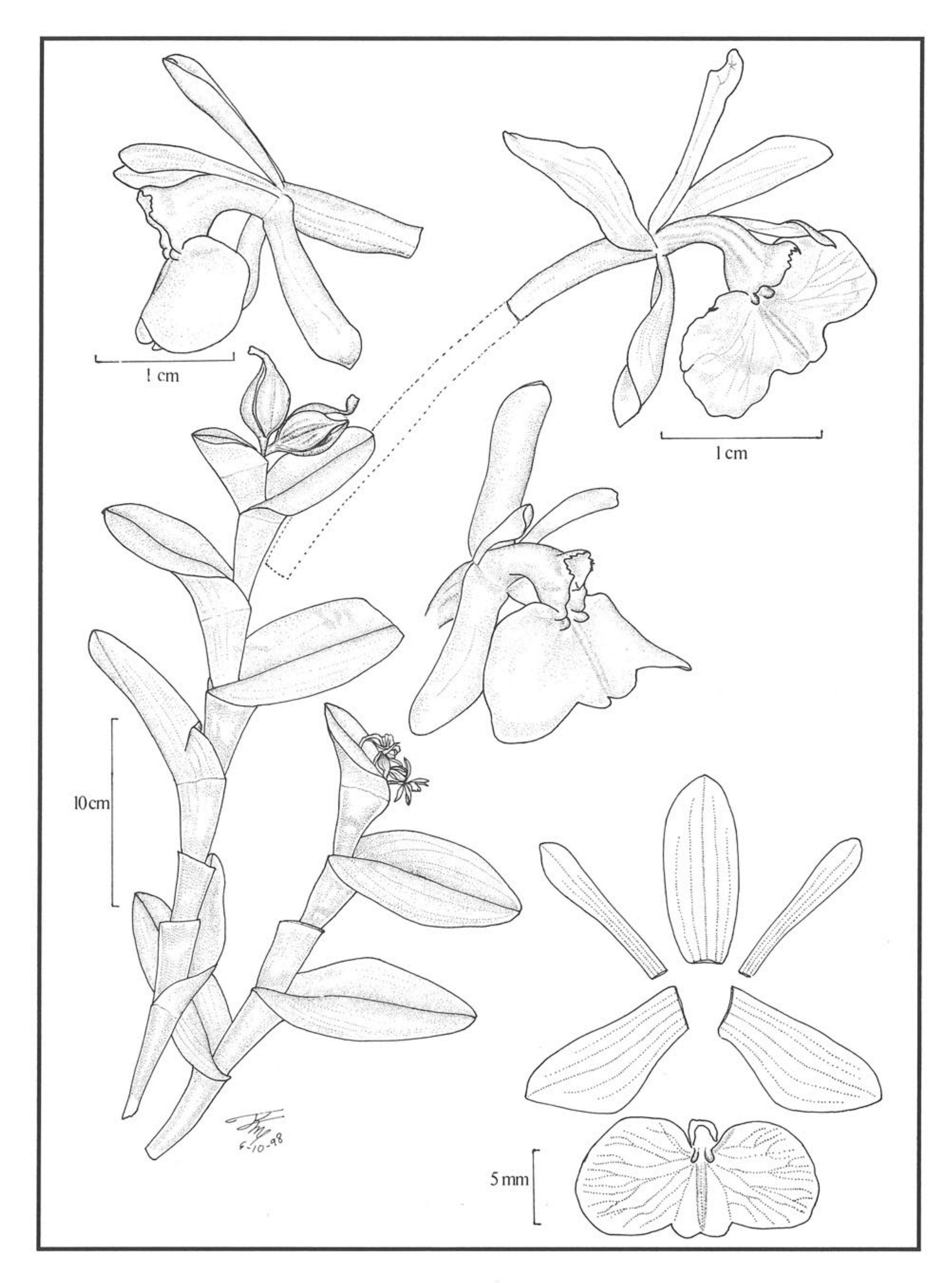


CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: From the Greek *"μεσος"* middle, and *"καρπος"* fruit, in reference to the position of the body of the capsule in relation to the pedicel and apical neck.

REFERENCES: Hamer, F., 1981. **Las Orquídeas de El Salvador**. Vol 3:98-99. Hamer, F., 1982. **Orchids of Nicaragua** Part 2. IPT 8: 709.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MICROCEPHALUM Hágsater & L. Sánchez

Plate 356

EPIDENDRUM MICROCEPHALUM Hágsater *et* L. Sánchez, *sp. nov*.

Holotype: VENEZUELA: Mérida: Rich forest above Hacienda Agua Blanca, above La Azulita, 1375-1920 m, 25 Apr. 1944, ***J. A. Steyermayk 56119*** F! (illustration voucher). Isotype: AMES!

Epidendro difformi Jacq. simile sed habitu majore, foliis longioribus et latioribus, floribus minoribus, ovario non inflato, lobulo medio labelli emarginato duos lobulos facienti, columna valde arcuata.

Hierba epífita, cespitosa, 24-35 cm de alto. **Raíces** basales. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 22-27 x 0.8-2.5 cm. **Hojas** 4-8, equidistantes a lo largo del tallo; vaina infundibuliforme, ancipitosa, lisa, 2-4.5 cm de largo; lámina anchamente elíptico-lanceolada, ápice desigualmente bilobado, margen entero, lisa, subcoriácea, carina dorsal baja, verde pálido, 3-12 x 2-4.5 cm. **Espata** ausente. **Inflorescencia** apical, sésil, en el tallo maduro, florece una sola vez, subcorimbosa. **Bráctea floral** mucho más corta que el ovario, ovada, aguda. **Flores** 2-6, resupinadas, sucesivas, verde pálido. **Ovario** inflado hacia el ápice, terete, no ornamentado, 20-30 x 0.8-1 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, elípticos, obtusos, margen ligeramente revoluto, 5-nervados, 10-12 x 1.5-2 mm; los **laterales** oblicuos. **Pétalos** extendidos, linear-oblanceolados, redondeados, margen entero, membranáceos, 3-nervados, 9-11 x 0.8-1.2 mm. **Labelo** unido a la columna, cordado en la base, trilobado, 7-9 x 13-14 mm; bicalloso, los callos pequeños, subglobosos; lóbulos laterales semiovados, enteros; lóbulo medio mucho más pequeño que los laterales, emarginado, formando dos lóbulos semiorbiculares, enteros. **Columna** arqueada, delgada, 7-8 mm de largo. **Clinandrio** prominente, eroso-dentado, cónico. **Nectario** penetrando 1/3 del ovario, no ornamentado **Cápsula** elipsoidal, con pedicelo delgado y corto.

Caespitose epiphyte. **Stems** simple, reed-like, laterally compressed, erect. **Leaves** 4-8, sheats infundibuliform; blade widely elliptic-lanceolate, apex bilobed, green. **Inflorescence** apical, sessile, flowering only once. **Floral bracts** shorter than the ovary, ovate, acute. **Flowers** 2-6, resupinate, succesives, pale green. **Ovary** inflated apicaly, terete. **Sepals** spreading, glabrous, free, subcoriaceous, elliptic, obtuse, margin somewhat revolute, 5-veined; the **laterals** oblique. **Petals** spreading, linear-oblanceolate, rounded, margin entire, membranaceous, 3-veined. **Lip** adnate to the column, cordiform, 3-lobed; bicallose, the callus subglobose; lateral lobes semiovate, entire; midlobe much smaller than the lateral lobes, emarginate, forming two semicircular, entire lobes. **Column** arquate. **Clinandrium** prominent, erose-dentate. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, unornamented. **Capsule** elipsoidal, with a thin and short pedicel.

OTHER SPECIMENS: VENEZUELA: Táchira: Cerro Las Minas, 18-20 km southeast of Santa Ana, open slopes facing Quebrada Las Minas, *Steyermark 119875, Liesner & González* MO.

DISTRIBUTION AND ECOLOGY: Endemic from Venezuela, caribbean slopes of the Cordillera of the Andes, from 1100 to 1950 m altitude. Flowering in April.

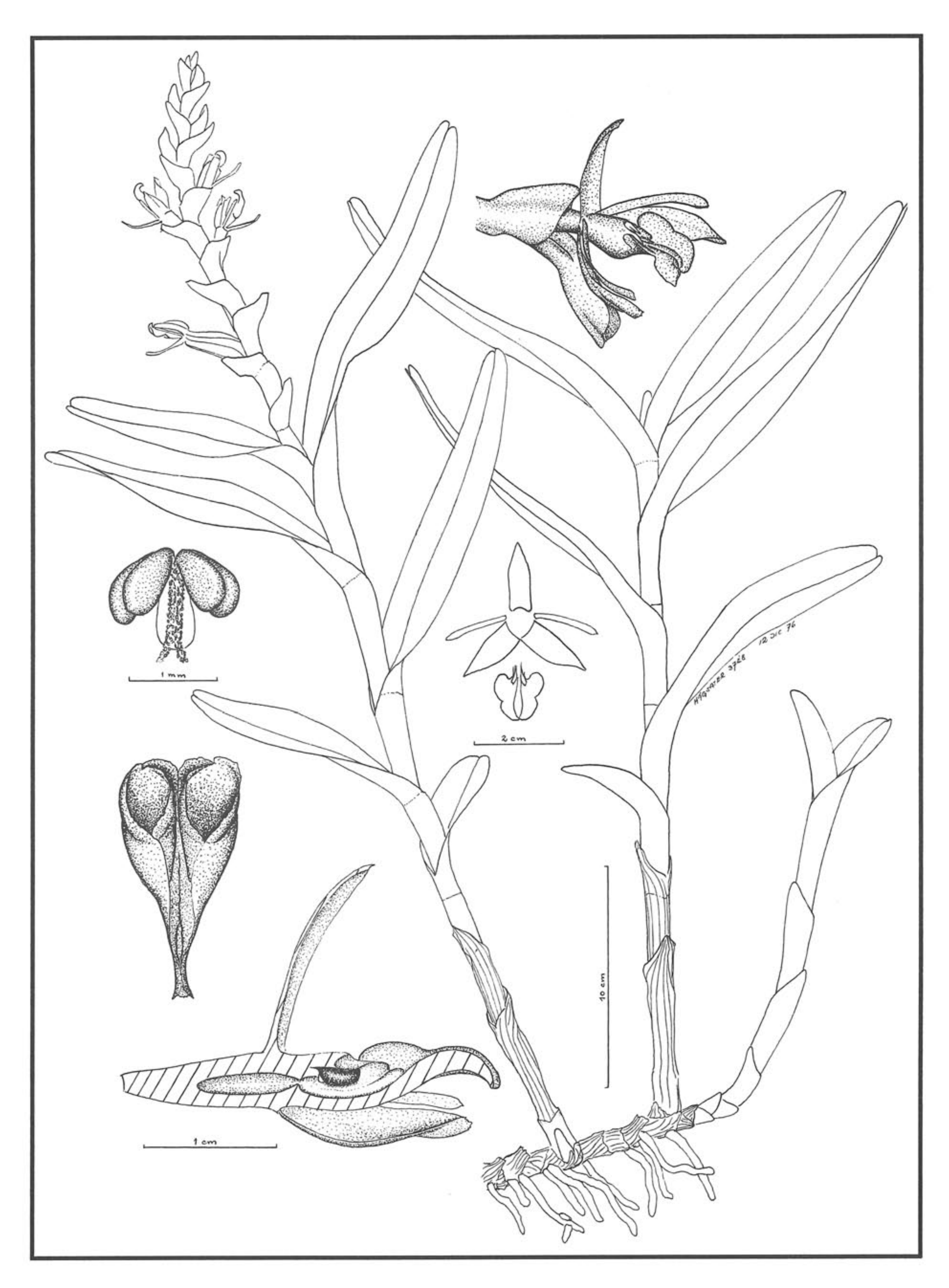
RECOGNITION: *Epidendrum microcephalum* belongs to the *Epidendrum difforme* group, is recognized by longer plants, widely elliptic-lanceolate leaves, infundibuliform sheath, small flowers, sepals 10-12 mm long, trilobed lip, semiorbicular lateral lobes, very small, emarginate midlobe forming two semiorbicular, entire lobes. It is closely related to *E. upanodifforme* Hágsater & L. Sánchez, which has bigger flowers, midlobe surpasing the lateral lobes. *Epidendrum schoorelii* Christenson, which has bigger flowers, entire lip, stright column.

CONSERVATION STATUS: DD (data deficient).



ETIMOLOGY: The epithet *microcephalum* is derived from the Greek "μικρός", small, and "κεφαλή" head, in reference to the very small flowers in relation with the vegetative large form.

Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MOCINOI Hágsater

Plate 357

EPIDENDRUM MOCINOI Hágsater, *sp. nov.*

Holotype: MÉXICO: Guerrero: Municipio Chichihualco, barranca Cruz de Ocote, 1950 m, col. Dec. 1973, pressed 12 Dec. 1976, ***E. Hágsater 3748*** AMO! (illustration voucher). Isotypes: AMES! BR! ENCB! IBUG! SEL! US! Clonotypes: 29 Dec. 1983 CAS! K! MO! P! 8 Feb. 1985 AMOx2! IEB! 7 Oct. 1985 F!

Epidendro nitenti Rchb. f. simile sed 4-6-foliato et floribus majoribus.

Hierba epífita, de simpodio rastrero o escandente, 30-47 cm de alto. **Raíces** basales, de los 4-5 nudos basales, carnosas, delgadas, 2 mm de grosor. **Tallos** sencillos, los tallo nuevos se originan del 4º ó 5º entrenudo del tallo anterior, tipo caña, lateralmente comprimidos hacia el ápice, rectos, 17-31 x 0.4-1.3 mm. **Hojas** 4-6, distribuidas hacia la mitad apical del tallo; vaina tubular, lateralmente comprimida, lisa, 1.2-5.6 x 0.5-1.3 cm; lámina articulada, angostamente elíptica, ápice bilobado, margen entero, subcoriácea, lisa, verde; 11-25 x 1.4-2.5 cm. **Espata** ausente. **Inflorescencia** apical, del crecimiento maduro, florece una sola vez, dística, suberecta, 8-20 cm de largo; pedúnculo y raquis lateralmente comprimidos, ancipitosos, no ornamentados, sinuosos; brácteas del pedúnculo 1-2, conduplicadas, 14-38 x 6-9 mm. **Brácteas florales** desiguales, progresivamente más cortas, igual o más largas que el ovario, ovadas, conduplicadas, redondeadas, casi perpendiculares al raquis, no imbricadas,11-25 x 5-11 mm. **Flores** 5-16, sucesivas, 2-6 abiertas en diferentes estados de desarrollo en un momento dado, concoloras, verdes, fragancia a limón, nocturna. **Ovario** dilatado hacia el ápice, terete, no ornamentado, 7-14 mm de largo. **Sépalos** extendidos, libres, glabros, coriáceos, ovados, agudos, margen extendido, 6-7-nervados, quilla dorsal apical, prominente en los laterales, finamente dentada hacia el ápice, (11)14-18 x 3.5-5.5 mm. **Pétalos** entreabiertos, lineares, dilatados en la base, redondeados a obtusos, margen extendido, entero, suculentos, 1-nervados, (11)13-17 x 1-1.6 mm. **Labelo** unido a la columna, entero, pandurado, profundamente cordado en la base, ápice redondeado a ligeramente emarginado, retuso, margen entero, 6-12 x 6-10 mm; bicalloso, callos lateralmente comprimidos; carina central roma. **Columna** recta, gruesa, terminada en un lóbulo alargado y amplio a cada lado, de manera que el clinandrio está casi a la mitad de la columna, 6-9 mm de largo. **Clinandrio** reducido, entero. **Antera** ovada, terminada en un proceso alargado, semicónica, angosta, 4- locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del doble de largo de los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/5 de largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, estrecho en la base de la columna, expandido en el ovario, liso interiormente. **Cápsula** no vista.

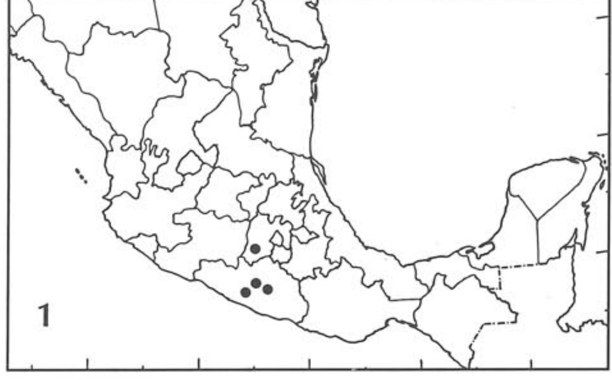
Epiphytic, creeping or scandent **herb. Stems** erect, laterally compressed towards the apex. **Leaves** distributed towards the apical half of the stem, narrowly elliptic, apex bilobed, subcoriaceous. **Inflorescence** apical, peduncle and rachis laterally compressed, ancipitous. **Floral bracts** nearly perpendicular to the rachis, ovate, rounded, conduplicate, progressively shorter, equal to or longer than the ovary. **Flowers** successive, several open at one time, concolor, green, fragrance lemon-like, nocturnal. **Sepals** ovate, acute, coriaceous, 6-7-veined, a prominent apical dorsal keel in the laterals. **Petals** linear, dilated at the very base, rounded to obtuse, 1-veined. **Lip** entire, pandurate, deeply cordate at the base, apex rounded, retuse; bicallose; with a low central keel. **Column** straight, thick, terminating in a prominent rounded lobe on each side. **Clinandrium** reduced, at about the middle of the column. **Pollinia** 4; caudicles soft and granulose; viscidium semiliquid, translucent. **Rostellum** subapical, slit. **Nectary** penetrating 1/2 of the ovary, narrowed at the base of the column and then expanded.

OTHER SPECIMENS: MEXICO: Guerrero: Barranca Cruz de Ocote, *Hágsater et al. 2843* AMO! F! INB! MICH! P! Ibid. *Hágsater 2845* AMO! FCME! MEXU! NY! UVAL! Santa Rosa, *Juan G. sub Oestlund 1711* AMES! Joverito, *Oestlund 2780* AMES! S! El Gallo-Atoyac, *Rzedowski & McVaugh 95* ENCB! MICH! Puerto de la Piedra Acanalada, *Salazar 28 & Soto* AMOx2! Ibid. *Salazar et al. 863* FCME!

OTHER RECORDS: MEXICO: Estado de México: Temascaltepec, *Cusi sub Hágsater 10408* AMO (note).

DISTRIBUTION AND ECOLOGY: Endemic to Mexico, in the states of Guerrero and México, in oak forest, pine and oak and mixed evergreen forest. Epiphyte, on oaks, at 1800-2000 m altitude. Flowering October to February.

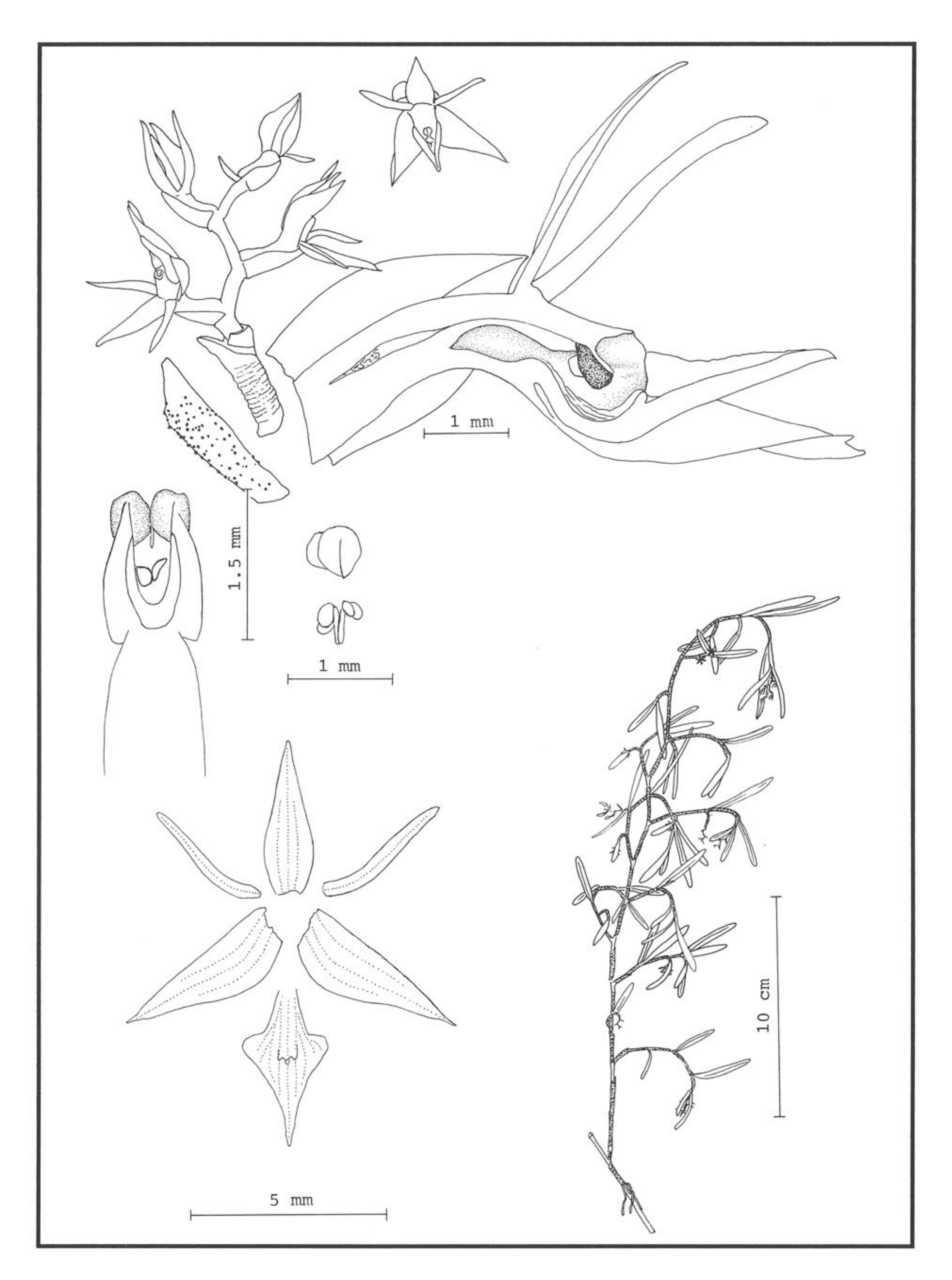
RECOGNITION: *Epidendrum mocinoi* closely resembles *Epidendrum nitens*, but is much larger overall, 4-6 leaved, with sepals usually 14-18 mm long, though sometimes smaller so that they would overlap in size with those of the latter which are generally 9-13 mm long and 2-leaved. Otherwise, the shape of the lip and other segments are very similar, *E. mocinoi* grows at higher altitudes. Both belong to *Epidendrum rigidum* Jacq. group, which is recognized by its creeping habit, simple, distichous inflorescence, with prominent, conduplicate bracts.



CONSERVATION STATUS: DD (data deficient). The species is known only from a relatively restricted area which has been heavily damaged by fire and for agriculture.

ETYMOLOGY: In honor of José Mariano Moçiño (1757-1820), who participated in the expeditions to collect plants in New Spain (now Mexico) together with Martín Sessé collected numerous orchids, their work being published posthumously in1890-1896.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MONOPHLEBIUM Hágsater

Plate 358

EPIDENDRUM MONOPHLEBIUM Hágsater, *sp. nov.*

Holotype: COSTA RICA: Cartago: Vertiente Atlántica oriental, orillas del Río Purisil, 1350 m, 20 Nov. 1982, ***C. Horich sub E. Hágsater 6932*** USJ! Isotypes: AMO! (illustration voucher), SEL! Clonotype: 2 Sep. 1982 AMES!

Epidendro sanchoi Ames simile sed labello ad basem truncato, callo 3-dentato et petalis 1-nervatis.

Hierba epífita, cespitosa, erecta, 25-50 cm de alto. **Raíces** basales, carnosas, filiformes, 1 mm de grosor. **Tallos** ramificados, teretes, flexuosos, el principal de 30 cm de largo o más, 2-3 mm de grosor, los secundarios de 3.5-10 cm de largo incluyendo la inflorescencia, 1.2-2.8 mm de grosor, los terciarios de 1.5-3.5 cm de largo incluyendo la inflorescencia, 1-1.5 mm de grosor. **Hojas** numerosas, distribuidas a lo largo del tallo, los secundarios con 3-5 hojas; vaina tubular, rugosa, 5-25 mm de largo; lámina angostamente oblonga, ápice bilobado, carinada, coriácea, las del tallo principal 4-5.5 x 0.3-0.7 cm, las de los tallos secundarios 1-3(4) x 0.17-0.3 cm, las de los tallos terciarios 1-2 x 0.15-0.3 cm. **Espata** ausente. **Inflorescencia** apical producida en cualquiera de las ramificaciones, racemosa, dística, laxa, 1-1.8 cm de largo; pedúnculo corto, 0.1-0.3 cm de largo; brácteas 0-1, oblongo-triangular, oblicua, conduplicada, envolvente, hasta 3 mm de largo; raquis flexuoso. **Brácteas florales** más largas que el ovario, abrazadoras, espaciadas, triangular-oblongas, agudas, 2-4 mm. **Ovario** no inflado, 2-4 mm de largo. **Flores** 4-5(6), simultáneas, el labelo siempre del lado del raquis, color verde pálido, aparentemente inodoras. **Sépalos** extendidos, lanceolados, acuminados, margen entero, 3-nervados, 4-5 x 1.2-1.5 mm; los **laterales** inflexos, oblicuos. **Pétalos** extendidos, lineares, agudos, margen extendido, entero, 1-nervados, 4.5-5 x 0.5 mm. **Labelo** unido a la columna, entero, triangular, base truncada, acuminado, margen entero, 2.7-3 x 2 mm; callo laminar, tridentado. **Columna** recta, corta, 2 mm de largo. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/3 del largo de la cavidad estigmática. **Nectario** poco profundo, apenas sobrepasando el perianto. **Cápsula** no vista.

Caespitose, epiphytic **herb**. **Roots** basal, filiform. **Stems** branched, terete, flexuous. **Leaves** distributed throughout the stems; sheaths rugose; blades narrowly oblong, apex bilobed, coriaceous, those of the main stem about twice the size of those of the secondary or tertiary stems. **Inflorescence** apical, from any of the ramifications, a flexuous distichous raceme. **Floral bracts** longer than the ovary. **Ovary** not inflated. **Flowers** 4-5(6), simultaneous, the lip always against the raquis, pale green. **Sepals** lanceolate, acuminate, 3-veined. **Petals** linear, acute, 1-veined. **Lip** entire, triangular, base truncate, acuminate; callus 3-dentate. **Column** straight, short. **Clinandrium** reduced, entire. **Anther** obovoid. **Pollinia** 4, laterally compressed. **Nectary** slightly penetrating the ovary beyond the perianth.

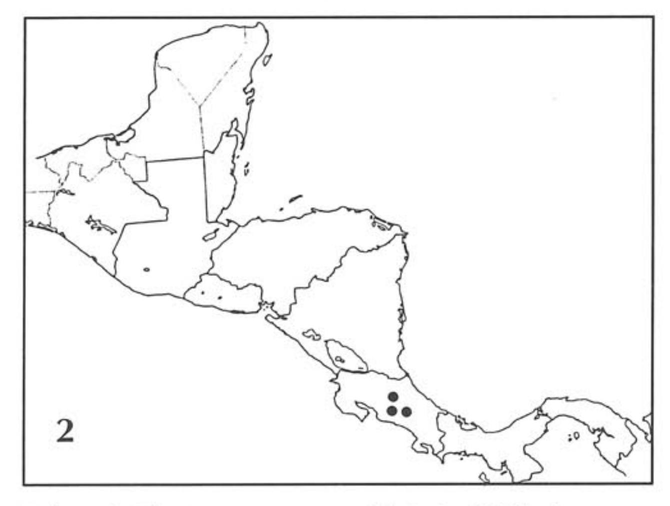
OTHER SPECIMENS: COSTA RICA: Alajuela: La Palma de San Ramón, *Lent 1719* CR! F! SEL! Viento Fresco, *Valerio 353* F! **Heredia:** Zurquí, *Gómez 2421* CR! F! U! Vara Blanca de Sarapiquí, *Lankester s.n.* SEL!

DISTRIBUTION AND ECOLOGY: Known from the Cordillera Central in Costa Rica, at 1200-1800 m altitude. Epiphytic in forest remnants in pastures. Flowering June, October-November.

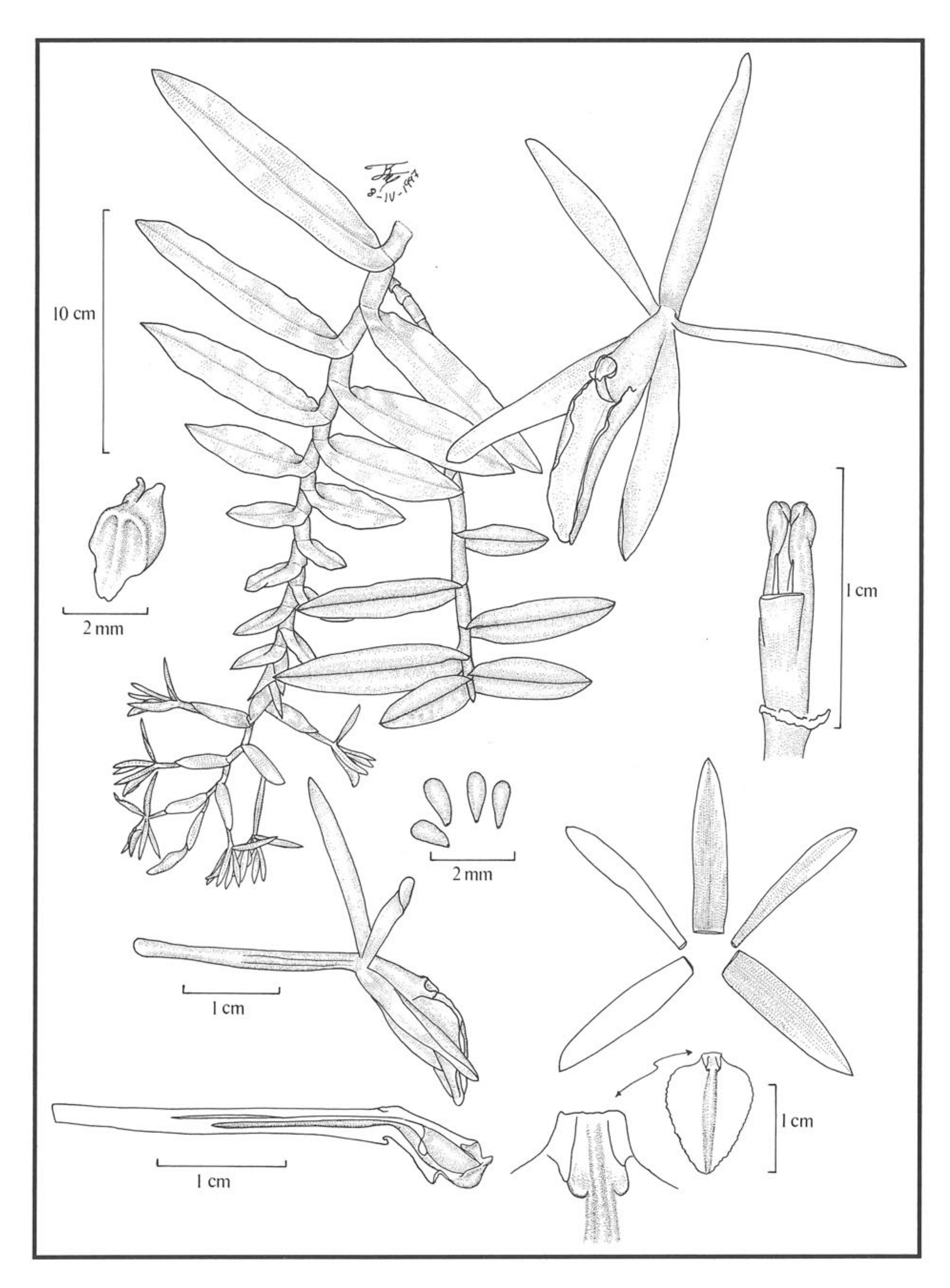
RECOGNITION: *Epidendrum monophlebium* is closely related to *Epidendrum sanchoi*, and can be recognized by its branching stems, 4-6 flowered distichous raceme, pale green flowers, linear, 1-veined petals and triangular lip with the base truncate, and the 3-dentate callus. *Epidendrum sanchoi* has a similar overall appearance, but the petals are 3-veined and the lip cordate at the base, ecallose with 3 thickened veins. *Epidendrum nutantirhachis* Ames & C. Schweinf. is wider overall, the leaves being 5-15 mm wide and the sepals 6-9 mm long.

CONSERVATION STATUS: DD (data deficient). It appears to grow well in disturbed sites.

ETYMOLOGY: From the Greek "*mono*" one, and "*phleba*" vein, one-veined, in reference to the one-veined petals which distinguish this species from its close relatives.



Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM MUTISII Hágsater

Plate 359

EPIDENDRUM MUTISII Hágsater, *sp. nov.*

Holotype: COLOMBIA: Municipio: San Luis, Cañón del Río Claro, 325 m, 5°53' N 74°39' W, 3 May 1984, ***A. Cogollo 1692*** MO 3511249! (illustration voucher). Isotypes: MO 3511242! AMO (flower in spirit)!

Epidendro rafael-lucasii Hágsater simile sed caulibus longioribus, floribus albis, labello ovato, sepalis anguste lanceolatis.

Hierba epífita, colgante, ramificada. **Tallo** ramificado, recto, lateralmente comprimido, tallo nuevo producido de un internudo intermedio del tallo anterior, de más de 27 cm de largo, ramificaciones secundarias de floración de 6 cm de largo. **Hojas** más de 16 en tallos principales, pocas en ramificaciones florales, distribuidas a lo largo del tallo, subcoriáceas; vaina tubular, lateralmente comprimida, cubriendo totalmente el tallo, 7-20 x 6-8 mm; lámina elíptica, emarginada, aristada en el seno, en ocasiones disminuyendo drásticamente de tamaño hacia el ápice o drásticamente desiguales, 2-11 x 0.8-2.6 cm. **Espata** ausente. **Inflorescencia** apical, de los tallos principales o de las ramificaciones, racemosa, dística, 6-10 cm de largo; brácteas del pedúnculo 2-4, semejantes a las florales, conduplicadas, cortas, erectas, 15-20 x 7-8 mm; raquis ligeramente flexuoso. **Brácteas florales** más cortas que el ovario, prominentes, conduplicadas, no imbricadas, separadas de 6-8 mm en el raquis en inflorescencias bien desarrolladas, las basales casi perpendiculares al raquis, 17-25 x 5-8 mm. **Flores** 4-7, sucesivas, varias abiertas a la vez, blancas, fragancia no reportada. **Ovario** terete, no inflado, recto, 17-32 mm de largo. **Sépalos** extendidos, angostamente lanceolados, agudos, subcoriáceos, dorsalmente carinados hacia el ápice, plurinervados, 17-20 x 4.5 mm. **Pétalos** extendidos, angostamente oblanceolados, obtusos, subcoriáceos, plurinervados, 19 x 3 mm. **Labelo** unido a la columna, entero, ovado, obtuso, margen eroso, los lados abrazando ligeramente a la columna en posición natural, 13 x 10 mm; ecalloso; unicarinado, la carina central, roma y prominente. **Columna** recta, gruesa, 9 mm de largo, terminando en un par de lóbulos laterales redondeados abajo, terminados en un diente junto al ápice de la antera. **Clinandrio** reducido, entero. **Antera** obovoide, con un par de procesos apicales y una quilla roma al centro, separando dos huecos cóncavos, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, alargados; caudículas suaves y granulosas; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/6 de largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** globosa, con un cuello apical prominente de 1/3 de la longitud total.

Pendent epiphyte. **Stems** branching, produced from an intermediate internode of the previous stem, laterally compressed. **Leaves** distributed throughout the stem; sheath tubular, laterally compressed; blade elliptic, emarginate, aristate in the sinus, often very unequal in size on the same stem. **Inflorescence** apical, from the main stem or from flowering branches, short, distichous; peduncle with 2-4 imbricating bracts; rachis flexuous. **Floral bracts** prominent, conduplicate, shorter than the ovary. **Flowers** 4-7, successive, several open at once, white. **Ovary** terete, not inflated. **Sepals** narrowly lanceolate, acute, many-veined. **Petals** narrowly oblanceolate, obtuse. **Lip** united to the column, entire, ovate, somewhat embracing the apex of the column; lacking a callus; central keel running down to the apex. **Column** straight, thick. **Clinandrium** reduced, entire. **Nectary** penetrating half of the ovary, unornamented. **Capsule** globose with a long apical neck about 1/3 of the overall length.

OTHER SPECIMENS: COLOMBIA: Antioquia: *Hernández 275 et al.* COL! *Quintana de H. 568* COL!

OTHER RECORDS: COLOMBIA: Without locality, plate 53 in José Celestino Mutis, Flora de la Real Expedición Botánica del Reyno de Granada (1783-1816), tomo IX, Microspermae: Orchidaceae III, (*Epidendrum* and *Diothonea*), Ediciones Cultura Hispánica, Madrid, 1985. Specimen apparently in MA, cited in Mutis.



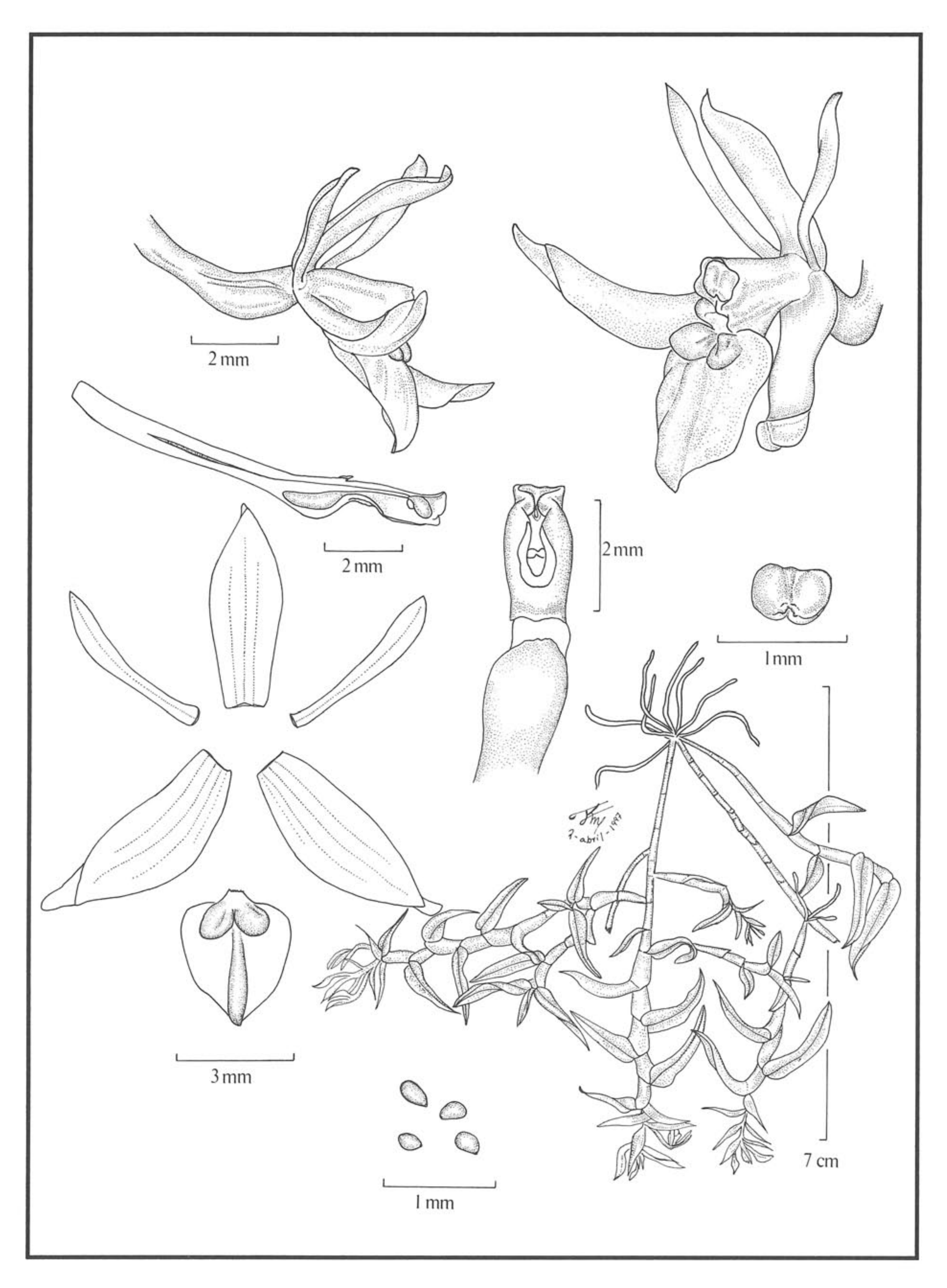
DISTRIBUTION AND ECOLOGY: Known only from southeastern Antioquia, Colombia, in the Valley of the Río Magdalena at 325-730 m altitude on eastern slopes of the Central Andes, epiphytic. Flowering in May and November.

RECOGNITION: *Epidendrum mutisii* is recognized by the pendent habit, with stems produced from the middle of a previous stem, the 4-7, white-flowered raceme with distichous bracts clearly separated in well-developed inflorescences. It is closely related to *E. rafael-lucasii* which has yellow-green flowers, shorter stems and differs in the apex of the column and lip. *Epidendrum mirabile* Ames & C. Schweinf. has larger, very showy purple flowers. *Epidendrum mora-retanae* Hágsater has a long main stem and small branches from which the raceme is produced with compact, imbricating bracts and white flowers. *Epidendrum acuñae* Dressler also has a main stem with small flowering branches, fleshy leaves but a raceme of two greenish brown flowers.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The species is dedicated to José Celestino Mutis, medical doctor and naturalist born in Cádiz, Spain in 1732. He traveled to Nueva Granada (now Colombia) in 1760 and dedicated his life to botany. Mutis was instrumental in the founding of the Botanical Expedition in 1783 which he directed until his death in 1808. He also founded the Astronomical Observatory of Santa Fé de Bogotá in 1803.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM NANOSIMPLEX Hágsater & Dodson

Plate 360

EPIDENDRUM NANOSIMPLEX Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Tungurahua: [Ambato], 2400 m, Jan. 1984, ***A. Hirtz 1474*** QCNE! Isotype: AMO! (flowering stem in spirit; illustration voucher).

Epidendro nanopse Dodson & Hágsater simile sed labello integro, ovario ventraliter inflato in tertia parte apicali vesicam ferenti, clinandrio prominenti integro.

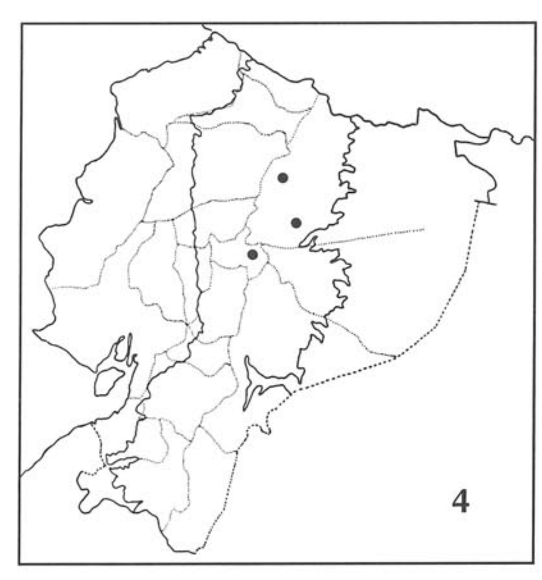
Hierba epífita, colgante, cespitosa y ramificada, hasta 6 cm de largo. **Raíces** filiformes, de la base del tallo, ca. 0.5 mm de grosor. **Tallos** ramificados, tipo caña, algo lateralmente comprimidos, 2-5 cm de largo, varias ramas originándose de los tallos anteriores en plantas adultas, generalmente cerca del ápice del tallo anterior. **Hojas** 7-9, distribuidas a lo largo del tallo, equidistantes, suculentas; vaina ancipitosa, estriada al secar, 5-7 x 1-3 mm; lámina articulada, angostamente lanceolada, acuminada, 10-22 x 3-6 mm. **Espata** ausente. **Inflorescencia** apical, colgante, racemosa, 10-12 mm de largo; pedúnculo corto provisto a la mitad de una bráctea intermedia en tamaño y forma entre la hoja apical y las brácteas florales. **Brácteas florales** triangulares, acuminadas, dorsalmente carinadas, progresivamente más pequeñas, 4-8 x 2-3 mm. **Flores** 6-7, una a la vez, sucesivas, resupinadas, de color verde claro, labelo y ápice de la columna blancos. **Ovario** inflado ventralmente en su tercio apical formando una vesícula, 6-7 mm de largo. **Sépalos** entreabiertos, elípticos, agudos, aristados, con una quilla dorsa! prominente, margen ligeramente revoluto, 3-nervados, 4-6 x 2 mm; los **laterales** ligeramente oblicous y con una nervadura secundaria adicional. **Pétalos** extendidos, angostamente oblanceolados, obtusos, 1-nervados, 3.5-4.5 x 1 mm. **Labelo** unido a la columna, entero, ovado, base truncada, obtuso, recurvado, convexo, carnoso, 3 x 1.5-2.8 mm; bicalloso, callos globulares; unicarinado, la carina prominente, ancha y roma prolongándose hasta el ápice del labelo. **Columna** recta, delgada, 2.7 mm de largo. **Clinandrio** prominente, entero, formando un cono pequeño alrededor de la antera. **Antera** 4-locular, subreniforme. **Polinios** 4, obovados, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más cortas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Nectario** penetrando 1/4 parte del ovario, dilatado hacia el ápice del ovario y formando una vesícula. **Cápsula** no vista.

Pendent, caespitose and branching epiphyte. **Stems** laterally compressed, new stems produced from near the apex or from the middle of the previous stem in older plants, completely covered by evanescent, imbricating, foliaceous sheaths. **Leaves** articulate, narrowly lanceolate, acuminate, succulent. **Inflorescence** apical, racemose; peduncle with a bract intermediate in size and shape between the leaves and the floral bracts. **Flowers** 6-7, successive, pale green, the lip and apex of the column white. **Ovary** inflated at the apical third, forming a vesicle. **Sepals** elliptic, acute, with a prominent dorsal keel, 3-veined; the **laterals** with an additional secondary vein. **Petals** narrowly oblanceolate, obtuse, 1-veined. **Lip** entire, ovate, base truncate, obtuse, recurvate, convex, fleshy; callus subglobose, prominent, with a ventral low, wide keel running from the callus to the apex of the lip, slightly longer than wide. **Column** straight. **Clinandrium** prominent, entire, forming a small cone around the anther. **Anther** subreniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, with two pairs of granular caudicles shorter than the pollinia; viscidium semiliquid. **Nectary** penetrating 1/4 of the ovary and forming a vesicle.

OTHER SPECIMENS: ECUADOR: Napo: Baeza, *Dodson 15893 & Hirtz* RPSC! SEL! Baeza, *Dodson 16608* RPSC! 14 km N of Archidona, *Luer 508 et al.* SEL! **Tunguragua:** Río Negro, *Dodson 1920 & Thien* SEL!

OTHER RECORDS: ECUADOR: Napo: Desviación Baeza-Lago Agrio, 2 km antes de Baeza, al margen del Río Papallacta, *Hágsater 9270 & Dodson* AMO (illustration by I. Aguirre-Olavarrieta; slides)! Without data, illustration by Lindberg AMO (xerox)!

DISTRIBUTION AND ECOLOGY: ECUADOR: Known only from the central part of the east slope of the Eastern Andes, epiphytic in very wet montane forest along rivers, at 600-2400 m altitude. Flowering in January and March.

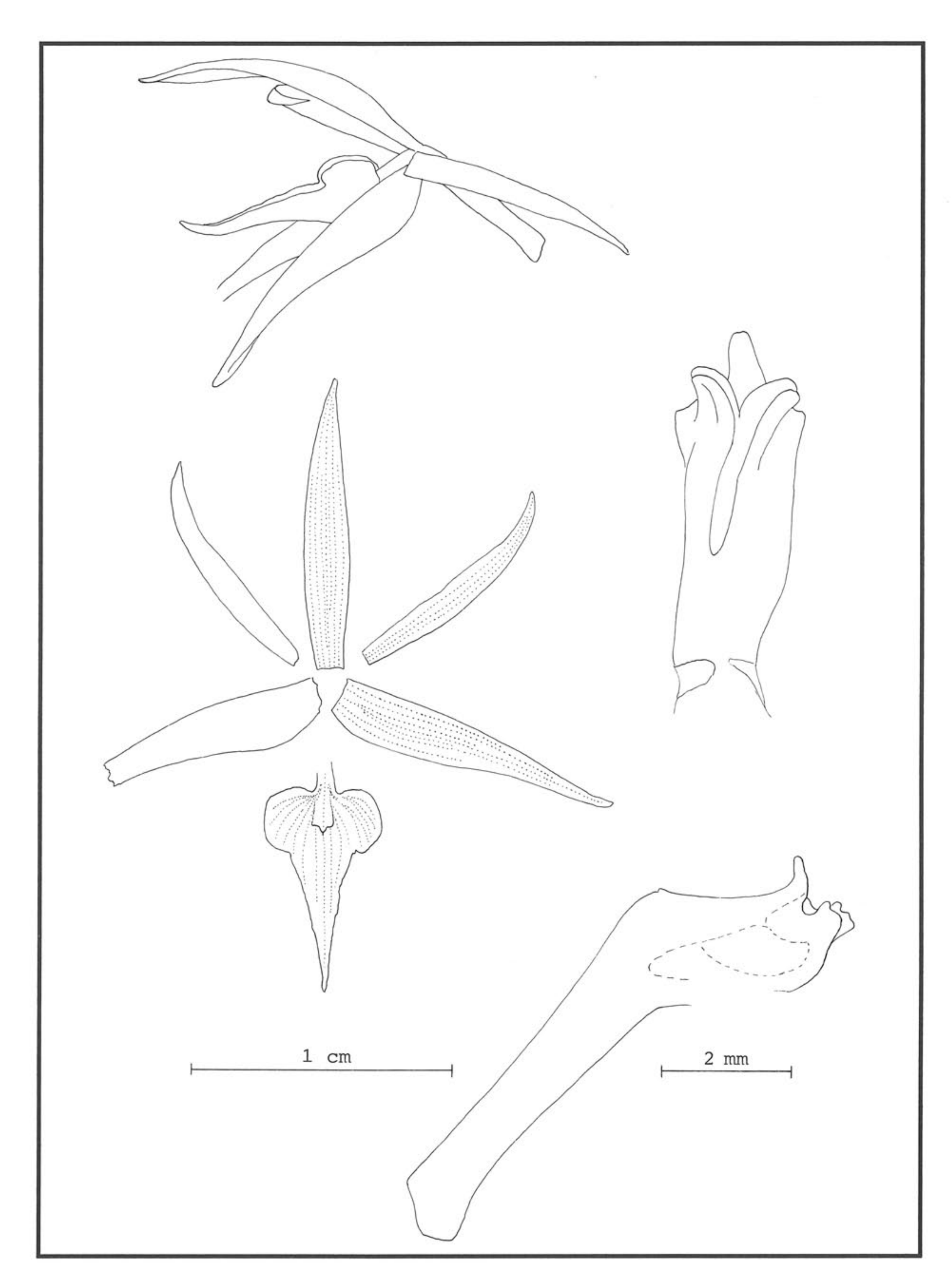


RECOGNITION: *Epidendrum nanosimplex* belongs to the *E. nanum* C. Schweinf. group, and can be recognized by the simple, entire lip, the vesicle of the ovary occupying about 1/3 of the ovary, and the entire clinandrium which slightly covers the anther. *Epidendrum dichaeoides* Carnevali & G. Romero has 1-2 flowers, but longer (6-9 mm) sepals, and wider petals (2-2.5 mm) clearly distinguish it. Other species in this group have a 3-lobed lip.

CONSERVATION STATUS: DD (data deficient). Locally common around Baeza.

ETYMOLOGY: The name refers to the *E. nanum* group of species, from *"nano"* very small and *"simple"* in reference to the simple, entire lip which distinguished this species from most others in this group.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ORHTODONTUM Hágsater & L. Sánchez

Plate 361

EPIDENDRUM ORTHODONTUM Hágsater *et* L. Sánchez, *sp. nov.*

Holotype: PANAMA: Provincia Chiriquí: Cuesta de Las Palmas, southern slopes of Cerro de La Horqueta, humid forest, 1700-2100 m, 17 Mar. 1911, ***H. Pittier 3220*** US 677617! Isotype: AMES 22677 (photograph and illustration)!

Epidendro nutantirhachide Ames & C. Schweinf. simile sed dente erecto ad columnae apicem (ad angulum 90° patenti), floribus majoribus et labello trilobato.

Hierba epífita, ramificada, 30-70 cm de alto. **Raíces** filiformes, basales, 1 mm de grosor. **Tallos** ramificados, cubiertos por hojas cuando jovenes, flexuosos, el principal terete, lateralmente comprimido en las ramas, casi completamente cubiertos por vainas. **Hojas** numerosas, distribuidas a lo largo de los tallos, coriáceas; vaina lateralmente comprimida, tubular en el tallo principal, longitudinalmente estriada, 10-35 x 3-6 mm; lámina articulada, angostamente elíptica a lanceolada, ápice bilobado, rugosa, en el mismo plano del tallo, 2-7x 0.2-0.9 cm. **Espata** ausente. **Inflorescencia** apical, de los tallos principales y laterales, florece una sola vez, racemosa, flexuosa, 2-4 cm de largo; pedúnculo ancipitoso, con una bráctea triangular, acuminada; raquis filiforme. **Brácteas florales** triangulares, acuminadas, papiráceas, claramente más largas que el ovario, 6 x 8.5 mm. **Flores** 2 a 5, alternas, no resupinadas, verde amarillentas a verde blanquecinas. **Ovario** terete, 4-5 mm de largo. **Sépalos** entreabiertos, angostamente lanceolados, agudos, 5-nervados, con dos venas subsidiarias dando la apariencia de ser 7-nervados, 10-12 x 1.5-2 mm; los **laterales** oblicuos. **Pétalos** extendidos, linear-lanceolados, algo falcados hacia el ápice, agudos, 3-nervados, con dos venas subsidiarias dando la apariencia de ser 5-nervados, 9-10 x 1 mm. **Labelo** unido a la columna, trilobado, en forma de cucharón en posición natural, cubriendo completamente a la columna, 8-9 x 4-5.5 mm; unicalloso, el callo laminar, tridentado; sin quillas; lóbulos laterales semiorbiculares, redondeados, 1.7-2 x 2.5 mm; lóbulo medio triangular, acuminado, 4.7-5.5 x 2.3-2.5 mm. **Columna** recta, corta, gruesa, con un diente erecto en el ápice (a 90°), y un par de procesos subcuadrados, margen eroso a los lados del ápice de la columna, 2-4.3 mm de largo. **Clinandrio** corto, formando un diente erecto, cónico. **Antera** obovoide, 4-locular. **Nectario** corto, sin penetrar más allá del perianto. **Cápsula** no vista.

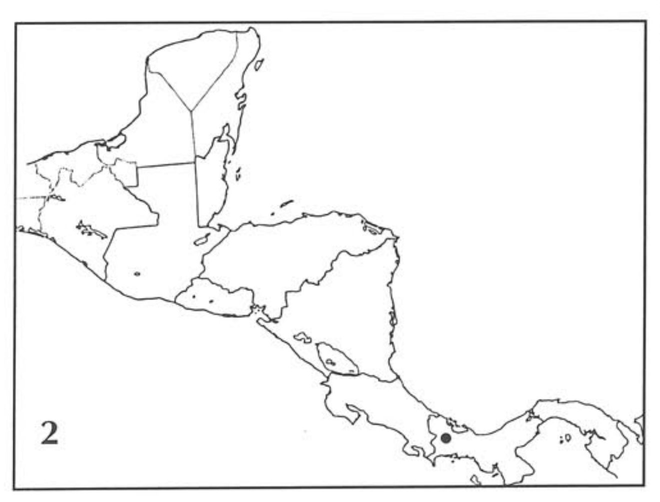
Epiphytic, branched **herb**. **Roots** filiform. **Stems** branched, flexuous, laterally compressed. **Leaves** distributed throughout the stems, coriaceous; sheath laterally compressed, striate, rugose; blade articulate, narrowly elliptic to lanceolate, apex bilobed, rugose. **Inflorescence** apical, from the main stem and branches, racemose; peduncle ancipitose, with one triangular bract; rachis filiform. **Floral bracts** triangular, acuminate, papiraceous, longer than the ovary. **Flowers** 2-5, alternate, non-resupinate, yellowish-green to greenish-white. **Ovary** terete. **Sepals** partly spreading, narrowly lanceolate, acute, 5-veined; **lateral** oblique. **Petals** spreading, linear-lanceolate, somewhat falcate near the apex, acute, 3-veined. **Lip** 3-lobed; unicallose, callus tridentate; without keels; lateral lobes semiorbicular, rounded; midlobe triangular, acuminate. **Column** straight, short and thick, with an erect tooth in the apex (at 90°), with a pair of subquadrate, erose wings on the sides at the apex. **Clinandrium** short, forming a conical erect tooth.

OTHER SPECIMENS: PANAMA: Chiriquí: Top of Cerro de La Horqueta, *Pittier 3236* US677633! (illustration voucher).

REGOGNITION: *Epidendrum orthodontum* is recognized by its branching habit, inflorescence with 2-5 flowers, narrowly lanceolate sepals 10-12 mm long, linear-lanceolate petals, 9-10 mm long, 3-lobed lip, 8-9 mm long, lateral lobes semiorbicular, midlobe triangular, acuminate, without keels on the disc, column straight with an erect tooth at the apex (at 90°), and a pair of subquadrate wings on each side. It is similar to *E. nutantirhachis* but this species has larger plants, leaves up to 7 x 1.5 cm, floral bracts ovate, about equaling the pedicellate ovary, smaller flowers, ovate to ovate-lanceolate sepals, 8-9 mm long, linear-lanceolate petals, 6-8 mm long, lip obscurely 3-lobed, ovate-triangular or triangular-cordate, 4-8 mm long, with prominent keels on the disc.

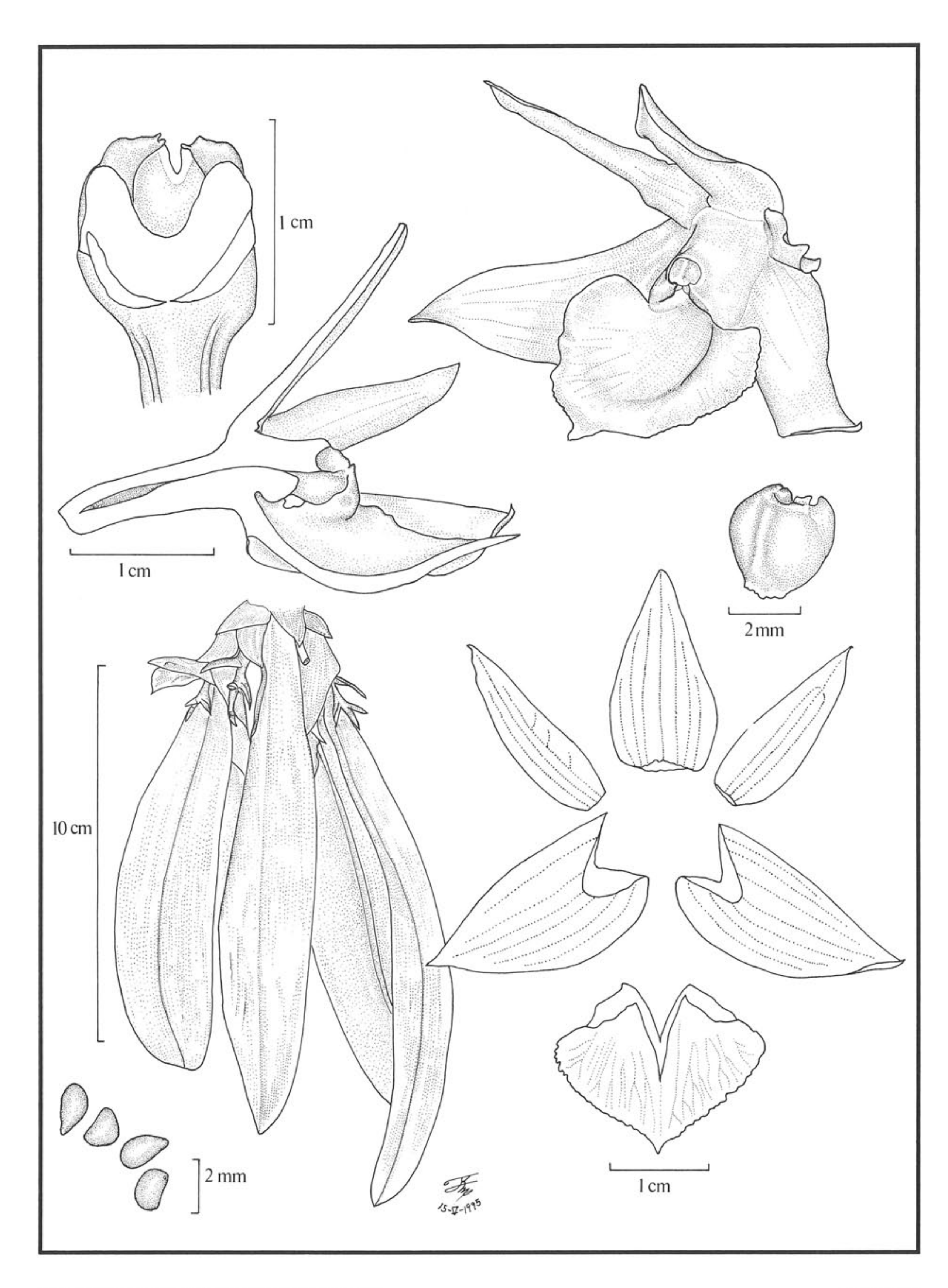
DISTRIBUTION AND ECOLOGY: PANAMA: Chiriquí: Apparently restricted to the Cerro Horqueta, 1700-2300 m altitude, epiphytic in humid forests. Flowering in March.

CONSERVATION STATUS: DD (data deficient).



ETYMOLOGY: From the Greek "όρθος" erect, upright, and "όδòντος" tooth, in reference to the erect tooth at the apex of the column.

Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM OXAPAMPENSE Hágsater

Plate 362

EPIDENDRUM OXAPAMPENSE Hágsater, *sp. nov.*

Holotype: PERU: Pasco: Oxapampa, hort. J. & L. Orchids, Apr. 1984, ***F. Fuchs sub J. & L. 484-174*** AMO! (flower in spirit, slide, illustration voucher).

Epidendro moronense Dodson & Hágsater simile sed labello trulliformi, margine eroso, petalis ovatis.

Hierba cespitosa, epífita, colgante, 12-16 cm de alto. **Raíces** basales. **Tallos** engrosados, formando un seudobulbo, agregados, 1 x 0.5 cm; totalmente cubiertos por 2-3 vainas imbricadas, desiguales, papiráceas, 1.4-3.5 x 1.6-2.2 cm. **Hoja** solitaria en el ápice del seudobulbo, coriácea; lámina elíptica, aguda, verde oscuro algo glauco, 7-14 x 2.5-3 cm. **Espata** ausente. **Inflorescencia** apical, racemosa, del seudobulbo maduro, florece una sola vez, 10-13 mm de largo. **Brácteas florales** más cortas que el ovario, 4-9 mm de largo. **Flores** 3-4, aparentemente simultáneas, resupinadas, grandes, verdes con el labelo marrón a rosado, fragancia no registrada. **Ovario** terete, grueso, no inflado, no ornamentado, 13 mm de largo. **Sépalos** entreabiertos, ovados, margen entero, rígidos, carnosos, 7-nervados; el **dorsal** obtuso, 20 x 9.6 mm; los **laterales** con una quilla dorsal apical, algo oblicuos, agudos, 23 x 11.5 mm. **Pétalos** entreabiertos, lanceolados, agudos, margen entero, rígidos, carnosos, 3-nervados, 19 x 6 mm. **Labelo** unido a la columna, entero, ampliamente truliforme, apiculado, cóncavo en posición natural, margen eroso, rígido, carnoso, 16.5 x 17 mm; ecalloso. **Columna** recta, gruesa, 9 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, algo lateralmente comprimidos hacia la base; caudículas suaves y granulosas; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** sin llegar al perianto. **Cápsula** no vista.

Caespitose, pendent epiphyte. **Roots** basal. **Stem** aggregate, forming a small pseudobulb hidden by the basal sheaths; sheath imbricating, unequal, papiraceous. **Leaf** solitary, at the apex of the pseudobulb, elliptic, acute, coriaceous, dark green and somewhat glaucous. **Inflorescence** apical, racemose, flowering only once. **Floral bracts** shorter than the ovary. **Flowers** 3-4, apparently simultaneous and resupinate, green with maroon to pink lip. **Sepals** partly open, ovate, fleshy, rigid, margin entire, 7-veined; the **dorsal** obtuse; the **laterals** acute, dorsally keeled towards the apex. **Petals** partly open, lanceolate, acute, fleshy-rigid, margin entire, 3-veined. **Lip** entire wide-trullate, apiculate, concave, fleshy, rigid, margin erose; ecallose. **Column** thick, straight. **Clinandrium** reduced, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granular; viscidium semiliquid. **Nectary** short, without reaching the perianth.

OTHER SPECIMENS: ECUADOR: Yangana to Valladolid, *Dalessandro 387* RPSC! (sterile specimen on loan at AMO, flower in spirit in RPSC not seen).

DISTRIBUTION AND ECOLOGY: Only from Peru and Ecuador, at 2500-3000 m. Flowering in April.

RECOGNITION: *Epidendrum oxapampae* belongs to the *Epidendrum serpens* Lindl. group, and is recognized by the pendant, 1-leaved pseudobulbs, glaucous leaves, the resupinate flowers with wide-trullate lip, the margin fleshy-erose. *Epidendrum moronense* has pendent, one-leaved pseudobulbs, but the column is longer and thinner, the lip reniform with lacerate margin and bicallose with a low keel in the center of the lip. *Epidendrum carmelense* Hágsater & Dodson is smaller overall and produces long strings of growths, the lip reniform, cordate, the sepals 10 mm long.

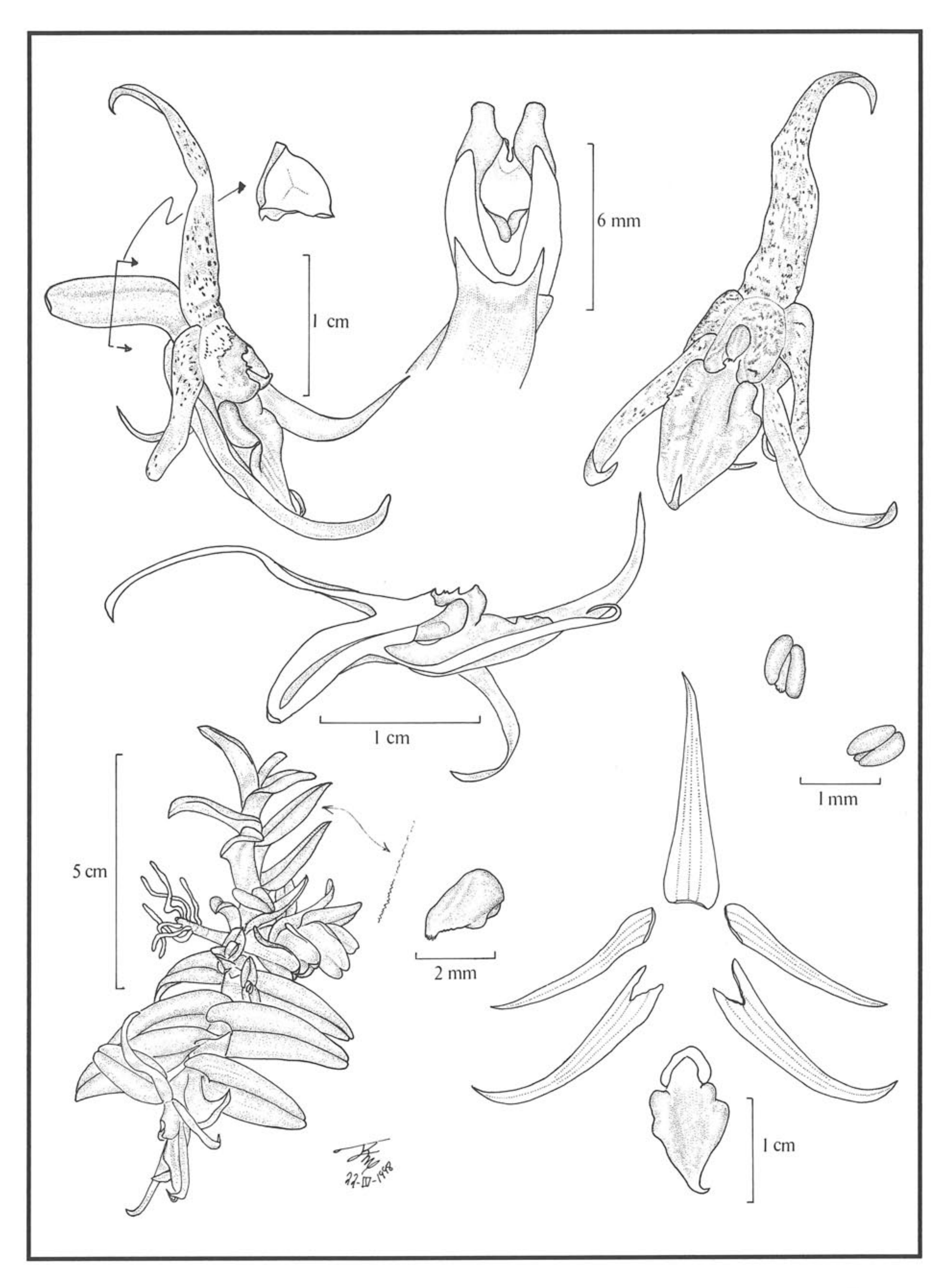
CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the Province of Oxapampa, in the Department of Pasco, Peru, where the type plant was collected.



Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**

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EPIDENDRUM OXYNANODES Hágsater

Plate 363

EPIDENDRUM OXYNANODES Hágsater, *sp. nov.*

Holotype: COLOMBIA: Hort. Colomborquídeas, 22 Apr. 1998, ***E. Hágsater 11530*** AMO! (flower in spirit, illustration voucher).

Epidendro schlechteriano Ames simile sed sepalis et petalis acuminatis.

Hierba epífita, cespitosa, 6-8 cm de alto. **Raíces** delgadas, de la base del tallo, 1-1.5 mm de grosor. **Tallos** erectos, sencillos, tipo caña, teretes, flexuosos, los tallos nuevos producidos de la base del tallo anterior y de los nudos inferiores, 2.5-5 x 0.5 cm. **Hojas** 6-10, distribuidas a lo largo del tallo, suculentas, rígidas, verdes con tintes amoratados en los lados expuestos al sol, persistentes, no articuladas, base tubular, las nervaduras visibles en fresco, de 0.2-1 cm de largo; lámina lanceolada, ápice bilobado, margen diminutamente aserrulado, desiguales, las intermedias más grandes, 1-3.5 x 0.8-1.1 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, subsésil; pedúnculo reducido; raquis hasta 1 cm de largo. **Brácteas florales** más largas que el ovario, foliosas, conduplicadas en la base, semejantes a las hojas pero más pequeñas, progresivamente más cortas, 10-20 x 3-7 mm. **Ovario** triquetro, no inflado, no ornamentado, 9 mm de largo. **Flores** 1-2, simultáneas, resupinadas, verdes, teñidas con puntos rojizos, labelo verde olivo-rojizo, sin fragancia. **Sépalos** angostamente triangulares, largamente acuminados, recurvados, carnosos, glabros, 3-nervados, 22 x 4-5 mm; el **dorsal** reflexo; los **laterales** extendidos, falcados. **Pétalos** recurvados, angostamente lanceolados, acuminados, recurvados, oblicuos, 3-nervados, 18 x 2.5 mm. **Labelo** unido a la columna, entero, cordiforme, acuminado, carnoso, ápice incurvado, cóncavo, margen revolutos, 11 x 8 mm; ecalloso. **Columna** recta, corta, gruesa, con dos lóbulos prominentes, laterales, recurvados, 6 mm de largo. **Clinandrio** reducido, con algunos dientes prominentes en el margen. **Antera** elipsoide, carnosa, 4-locular, con el ápice fimbriado. **Polinios** 4, lateralmente comprimidos, obovoides; caudículas más cortas que los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** hendido, en el tercio apical de la columna. **Lóbulos laterales del estigma** de 1/2 de la cavidad estigmática. **Nectario** sin traspasar el perianto, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** erect, terete, flexuose, the new stem from the base of the previous stem and from the lower nodes. **Leaves** succulent, rigid, non-articulate, persistent, base tubular, blade lanceolate, bilobed, margin minutely serrulate. **Inflorescence** apical, distichous, subsessile. **Floral bract** leaf-like but smaller. **Ovary** triquetrous. **Flowers** 1-2, green tinged with red, lip olive green with reddish. **Sepals** narrowly triangular, long-acuminate, recurved, fleshy, 3-veined. **Petals** narrowly lanceolate, oblique, recurved, 3-veined. **Lip** entire, cordiform, acuminate, fleshy, apex incurved; ecallose. **Column** straight, short, thick, with a recurved lobe on each side. **Clinandrium** reduced, with a few prominent teeth in the margin. **Nectary** not penetrating behind the perianth.

RECOGNITION: *Epidendrum oxynanodes* is closely related to *E. schlechterianum* with equally large flowers, the sepals being some 2 cm long, but distinguished by the long acuminate sepals and petals. *Epidendrum schlechterianum* has oblong, acute, sepals and petals. Other species in this group such as *Epidendrum neodiscolor* Hágsater, *Epidendrum gonzalez-tamayoii* Hágsater, *Epidendrum congestum* Rolfe, *Epidendrum congestoides* Ames & C. Schweinf. and *Epidendrum longirepens* (C. Schweinf.) C. Schweinf., all have smaller flowers, the sepals being less than 12 mm long. *Epidendrum medusae* (Rchb.f.) Pfitzer has much large flowers with a prominent fimbriate lip.

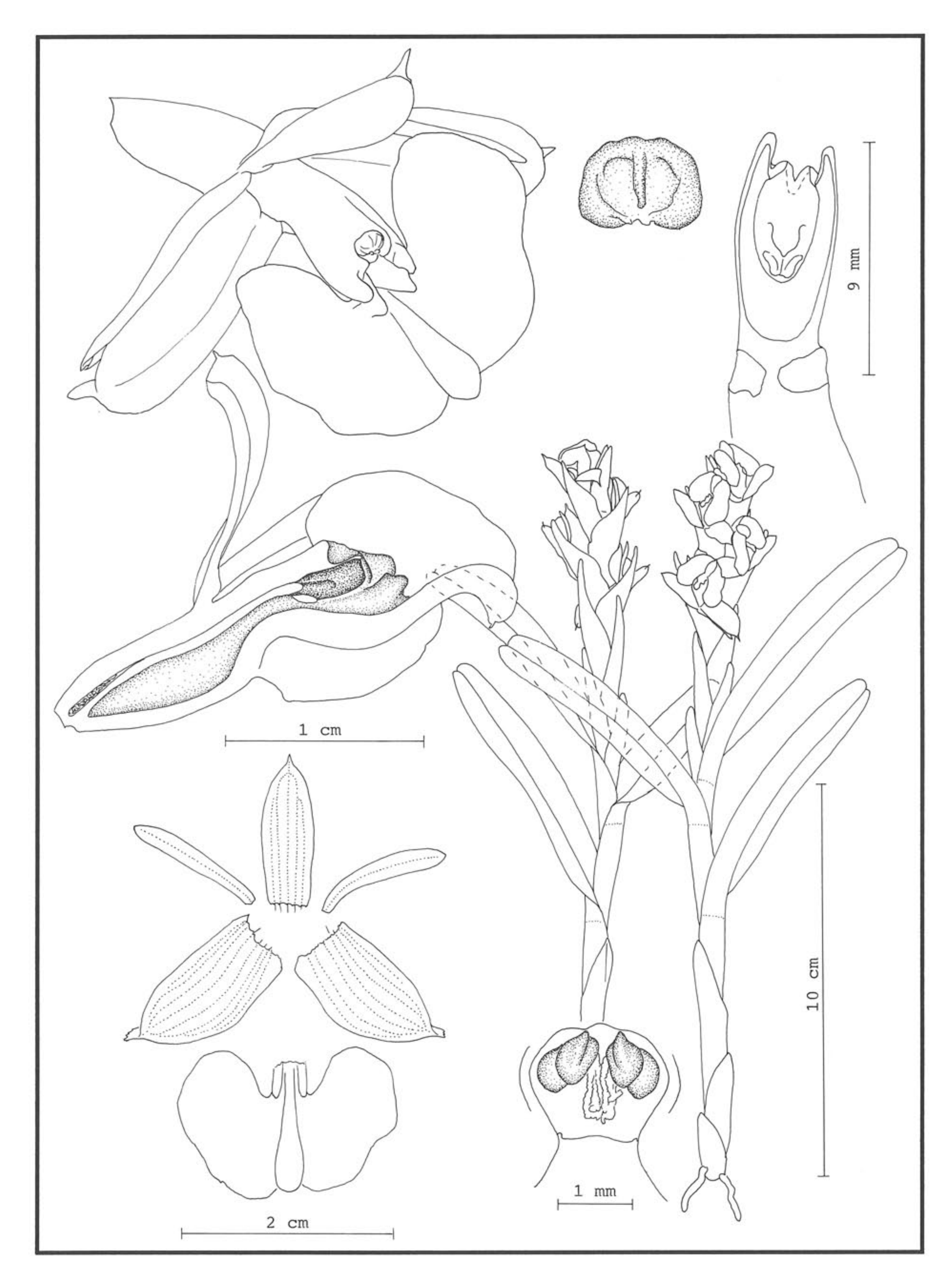
DISTRIBUTION AND ECOLOGY: Without data, known only from the type, a cultivated specimen. Presumably from northwestern Colombia, in the departments of Antioquia or the Chocó. Flowering in cultivation in Mexico in April.

CONSERVATION STATUS: DD (data deficient).



ETYMOLOGY: From the Greek *"oxy"* pointed, and *"Nanodes"* the name proposed by Lindley as a new genus for a species of this group.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PALMIDIUM Hágsater

Plate 364

EPIDENDRUM PALMIDIUM Hágsater, *sp. nov.*

Holotype: COSTA RICA: San José: Entre Filo de la Cordillera de Talamanca y Hacienda La Lucha, 1800 m, col. Mar. 1981, pressed 13 Oct. 1983, ***E. Hágsater 6349* & *C. Horich*** AMO! (illustration voucher). Clonotype: INB!

Epidendro palmensi Ames simile sed inflorescentia simultanea, foliis angustioribus, labello reniformi profunde cordato, petalis latioribus et odore nocturno dulci, differt.

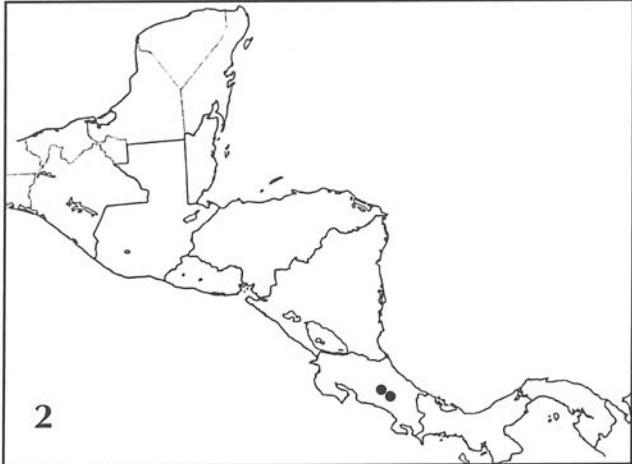
Hierba epífita, cespitosa, 20-33 cm de alto. **Raíces** basales, carnosas, gruesas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos hacia el ápice, rectos, 8-20 x 0.5-0.9 cm. **Hojas** 2-3[4], dísticas, distribuidas hacia el ápice del tallo, subcoriáceas; vaina tubular, lateralmente comprimida, lisa, ca. 5 cm de largo; lámina articulada, angostamente oblonga, ápice desigualmente bilobado, margen entero, lisa, verde, 4-11.5 x 1.2-1.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, erecta, flexuosa, 9-18 cm de largo; pedúnculo y raquis lateralmente comprimidos, ancipitosos, no ornamentados; brácteas del pedúnculo 1-5, semejantes a las florales, subparalelas al pedúnculo, imbricadas, conduplicadas, agudas, 25-50 mm de largo. **Brácteas florales** más largas que el ovario, hasta casi tan largas como el ovario y perianto, conduplicadas, anchamente ovadas, acuminadas, arqueadas hacia adentro, 16-30 mm de largo, en las inflorescencias secas, ya sin flores, son abiertas, no imbricadas, algo arqueadas hacia adentro, agudas. **Flores** 4-7, simultáneas, no resupinadas, secundas, verdes teñidas de morado, el labelo con la quilla verde, columna verde, brácteas algo teñidas de morado, fragancia nocturna dulce, grasa. **Ovario** terete, inflado en toda su longitud, no ornamentado, 8-12 mm de largo. **Sépalos** entreabiertos, más o menos extendidos, libres, oblongo-elípticos, obtusos, glabros, coriáceos, margen extendido; el **dorsal** apiculado, 5-nervado, 14 x 5 mm; los **laterales** carinados, la carina dentada, 7-nervados, 14 x 7 mm. **Pétalos** entreabiertos, angostamente elípticos, arqueados, obtusos, margen extendido, 1-nervados, 14 x 2 mm. **Labelo** unido a la columna, entero, reniforme, profundamente cordado, ápice truncado, emarginado, margen entero, 12-14 x 15-20 mm; bicalloso, los callos laminares; con una carina roma, ancha. **Columna** recta, gruesa, 9 mm de largo. **Clinandrio** reducido, entero. **Antera** reniforme, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando a todo lo largo del ovario, inflado en toda su longitud, no ornamentado.

Caespitose epiphyte. **Stem** simple, laterally compressed near the apex, erect. **Leaves** 2-3[4], distichous, narrowly oblong, apex bilobed, subcoriaceous. **Inflorescence** apical, from mature growth, distichous, erect, flexuose; peduncle and rachis laterally compressed, ancipitose. **Floral bracts** longer than ovary, conduplicate, acuminate, arched inward. **Flowers** 4-7, simultaneous, non-resupinate, secund, green somewhat purple-tinted, the column and keel of the lip green, bracts purple-tinted, nocturnal, sweet, greasy fragrance. **Ovary** inflated throughout. **Sepals** oblong-elliptic, apiculate, 5-veined; the **laterals** dorsally keeled, the keel dentate, 7-veined. **Petals** narrowly elliptic, obtuse, 1-veined. **Lip** entire, reniform, deeply cordate, apex emarginate; bicallose with a wide, median low rounded keel. **Column** straight. **Clinandrium** reduced. **Anther** reniform, 4-celled. **Rostellum** slit. **Nectary** penetrating all of the ovary, inflated throughout.

OTHER SPECIMENS: COSTA RICA: San José: *Williams 19682* SEL! **Cartago:** *Atwood 4163 et al.* USJ! *Williams 19848* SEL!

DISTRIBUTION AND ECOLOGY: Apparently common in wet forests in the Cordillera de Talamanca in Costa Rica, 1600-1800 m altitude. Flowering May-October.

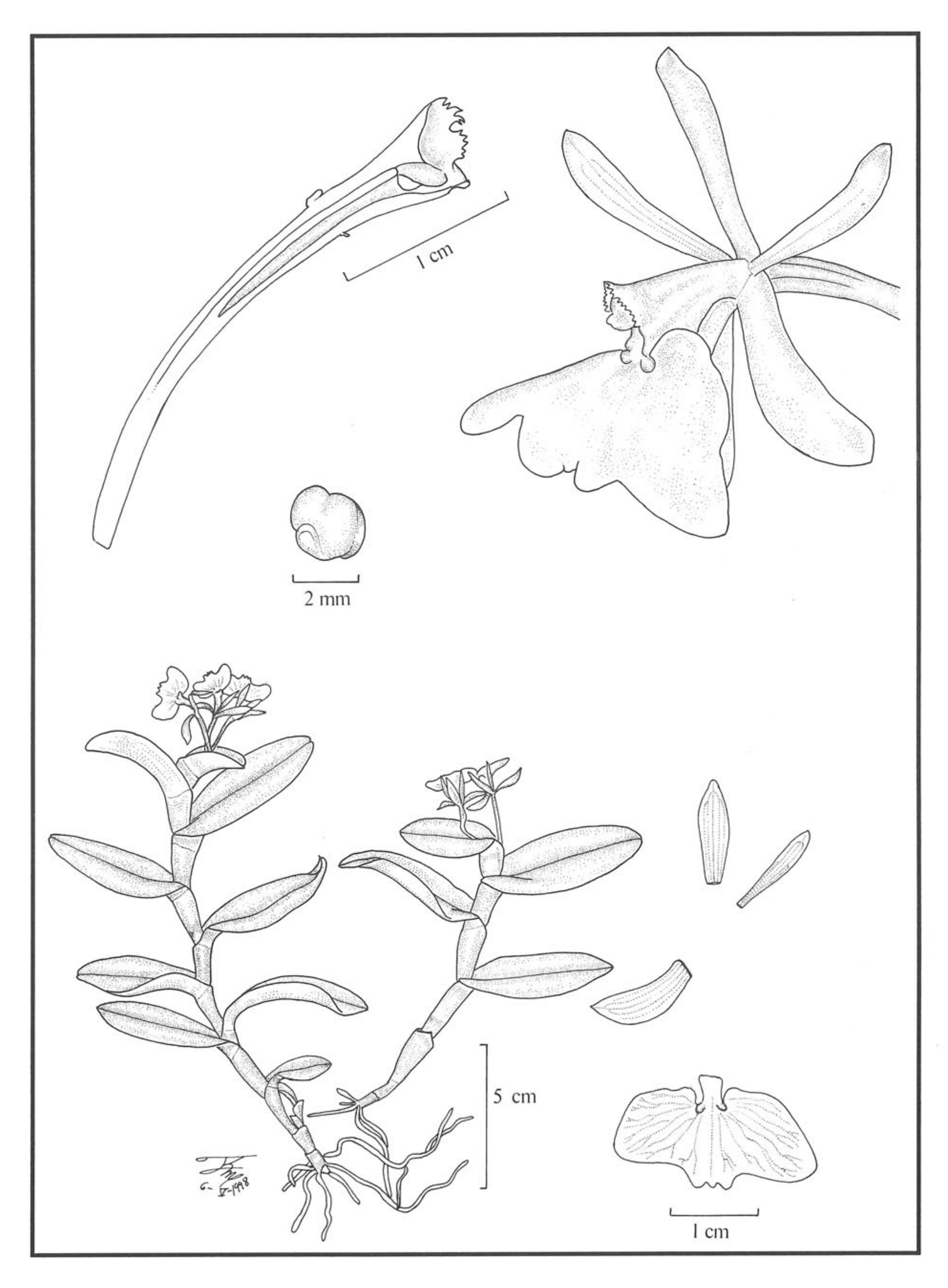
RECOGNITION: *Epidendrum palmidium* belongs to the *Epidendrum coriifolium* Lindl. group and is closely related to *E. palmense* and has been confused as a small, poor specimen of the latter, it can be recognized by the relatively narrow and short leaves (4-11.5 x 1.2-1.6 cm), acuminate floral bracts which are nearly as long as the flower, the reniform lip which is deeply cordate at the base and emarginate at the apex, flowers are produced simultaneously and have a sweet, greasy nocturnal fragrance, quite distinct from the strong seminal fragrance of *E. palmense* which has wider leaves, generally 2.5-3.5 cm wide. *Epidendrum caluerorum* Hágsater from Panama has similar sized leaves, but the lip is truncate at the base and the petals linear, the inflorescence is commonly more elongate and the basal bracts are strongly incurved. *Epidendrum coriifolium* is endemic to Chiapas, Mexico and Guatemala, and has compact plants, with leaves up to 3.5 cm wide.



CONSERVATION STATUS: Unknown. The species seems relatively common in Costa Rica especially in the Cordillera de Talamanca.

ETYMOLOGY: From "*palm*" in reference to *E. palmense*, with the Greek suffix "*idium*" diminutive; alluding to the appearence of the species as a "poor specimen" thereof.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM PANEGYRICUM Hágsater & L. Sánchez

Plate 365

EPIDENDRUM PANEGYRICUM Hágsater et L. Sánchez, *sp. nov.*

Holotype: DOMINICA: Laudat, ***E. Lloyd 264*** NY! (illustration voucher).

Epidendro latilabro Lindl. simile sed caulibus ancipitibus, floribus 2-3 pallide viridibus, lobulis lateralibus labelli ellipticis, lobulo medio transverse rectangulari.

Hieba epífita, cespitosa, 13-18 cm de alto. **Raíces** basales, filiformes, 0.6-1 mm de grosor. **Tallos** sencillos, tipo caña, ancipitosos, ligeramente flexuosos, 10-24 x 2.5-9 cm. **Hojas** 5-9, semejantes, equidistantes a lo largo del tallo, coriáceas; vaina ancipitosa, 1.5-3.5 cm de largo; lámina elíptica a ovada, obtusa, retusa, ligeramente carinada, verde, 3-11 x 1.2-3 cm. **Espata** ausente. **Inflorescencia** apical, en el tallo maduro, florece una sola vez, sésil, 4-5.5 cm de largo. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, 5-5.5 x 1.5-2 mm. **Flores** [1]2-3[4], resupinadas, simultáneas, verde pálido. **Ovario** ligeramente dilatado hacia el ápice, terete, no ornamentado, 20-35 x 1-2.3 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, elípticos a obovados, agudos a obtusos, margen entero, revoluto,5-nervados, quilla dorsal ligeramente prominente hacia el ápice, 13-18 x 3-4.5 mm; los **laterales** oblicuos. **Pétalos** extendidos, espatulado-oblanceolados, redondeados a obtusos, margen entero, extendido, subcoriáceos, 5-nervados, 12-15 x 1.3-1.5 mm. **Labelo** unido a la columna, trilobado; bicalloso, los callos pequeños, subglobosos; sin carinas, 8-13 x 17.5-24 mm; lóbulos laterales elípticos, enteros, 5-7 x 10-12 mm; lóbulo medio corto, doblado hacia atrás, transversalmente rectangular, apiculado, con dos senos a cada lado de éste dando la apariencia de ser un ápice trilobado, 1-2.5 x 5-6 mm. **Columna** recta, obcónica, 9-10 x 2-3 mm. **Clinandrio** corto, fimbriado a dentado. **Antera** subesférica, con un pequeño apículo en forma de silla de montar al frente, 4-locular. **Polinios** 4, subiguales, semiovados, lateralmente comprimidos; caudículas semejantes a la longitud de los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/2 de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose **herb**. **Stems** simple, reed-like, ancipitose, slightly flexuous. **Leaves** 5-9, subequal, elliptic to ovate, obtuse, retuse, coriaceous. **Inflorescence** apical, sessile. **Flowers** [1]2-3[4], resupinate, simultaneous, pale green. **Sepals** subcoriaceous, glabrous, free, elliptic to obovate, acute to obtuse with dorsal keel, revolute; the **laterals** oblique. **Petals** spreading, spathulate-oblanceolate, rounded to obtuse, margin entire, subcoriaceous. **Lip** united to the column, 3-lobed; bicallose, the callus small, subglobose; lateral lobes elliptic, margin entire; midlobe transversally rectangular, apiculate, with two sinuses, apparing 3-lobed. **Column** straight, obconic. **Clinandrium** short, fimbriate to dentate. **Anther** subspherical, with a saddle shaped appendix in front, 4-celled. **Rostelllum** subapical, slit. **Nectary** penetrating 1/2 the ovary.

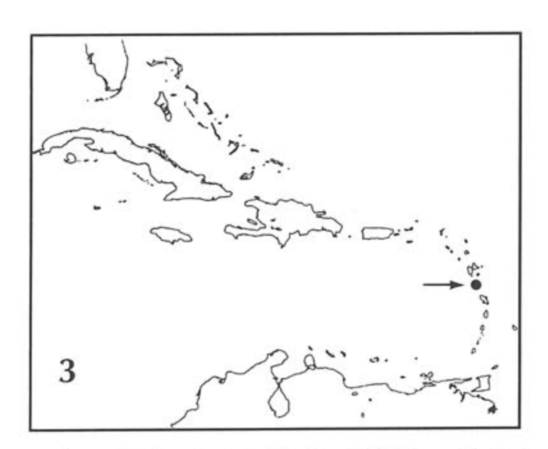
OTHER SPECIMENS: DOMINICA: South Chiltern, between Pointe Michel and Soufrière Bay, *Ernest 1119* BM, US! South slope of Morne Macaque (Micotrin) on road to Fresh Water Lake, *Ernst 1729* AMES! US! Morne Colta Anglais Sylvania, *Hodge 374* AMES! Lisdara, *Hodge 380* AMES! BM, NY! US! Lisdara, *Hodge 2470* AMES! Morne Anglais, *Hodge 381* GH! Laudat, *Lloyd 385* NY! Micotrin, along trail from a point about ½ mile beyond Laudat to one ½ mile beyond Fresh Water Lake (L'etang), *Wilbur 7423 et al.* US!

DISTRIBUTION AND ECOLOGY: Endemic to Dominica, epiphyte in rain forest, from 450 to 1145 m altitude. Flowering from June to August.

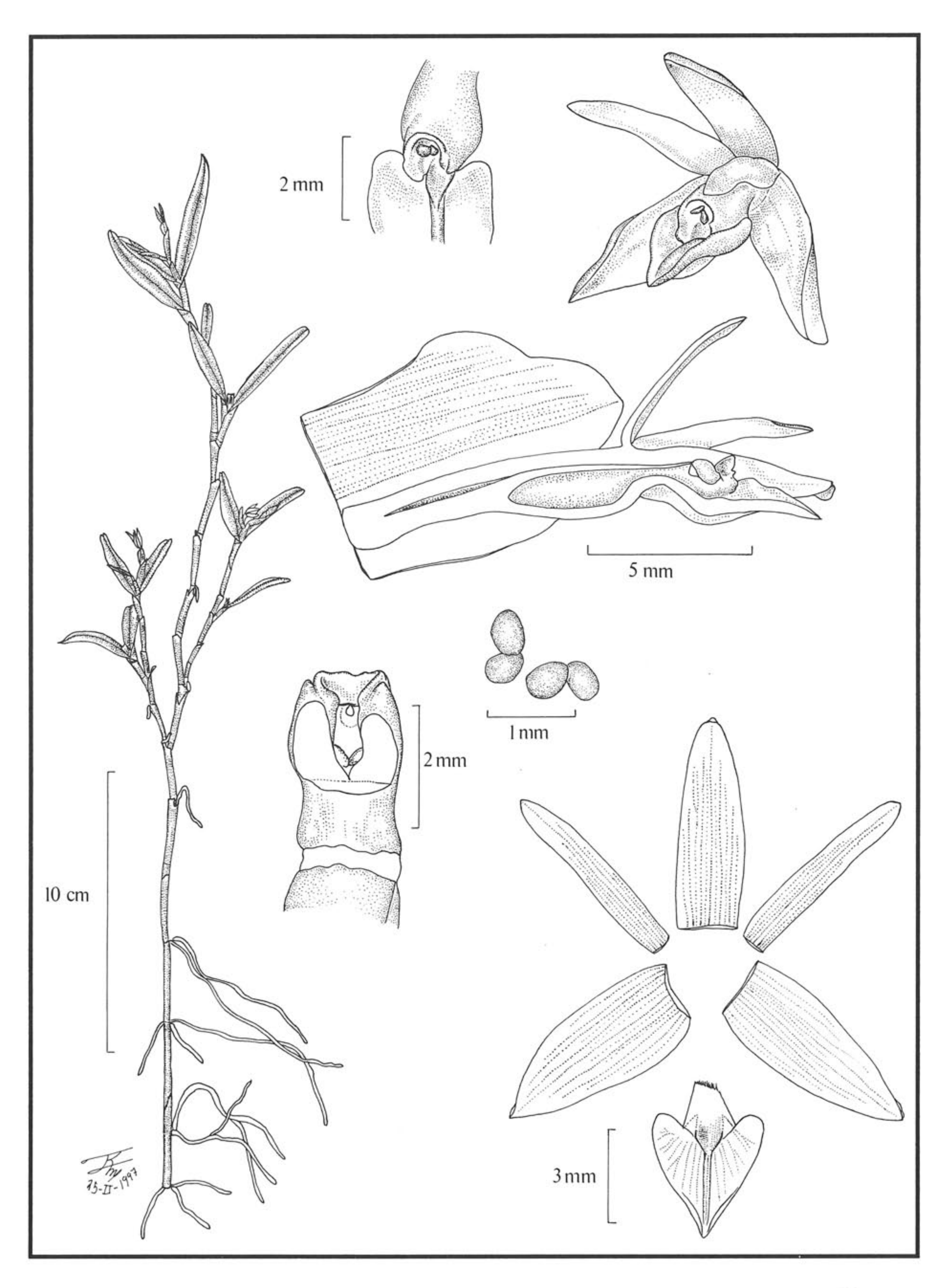
RECOGNITION: *Epidendrum panegyricum* is member of the *Epidendrum difforme* Jacq. group and can be recognized by its ancipitose stems, 2-3 simultaneous, pale green flowers, 3-lobed lip, elliptic lateral lobes and transversely rectangular midlobe, straight, obconical column. It is somewhat similar to *E. latilabrum* from Brazil which has laterally compressed stems, successive, green and larger flowers, semiorbicular to subrectangular lateral lobes and subcuadrate midlobe. It differs from *E. difforme* from Lesser Antilles, which also has ancipitous stems, smaller plants and flowers, green flowers, lip with subquadrate midlobe and occasionally arcuate column.

CONSERVATION STATUS: DD (data defiecient).

ETIMOLOGY: In reference to the type locality of Laudat, where the species appears to be endemic, by similarity with the Latin "*laudare, laudatio*" to praise, eulogy, which in Greek corresponds to "*panegyricos*".



Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM PARADISICOLUM Hágsater & García-Cruz **Plate 366**

EPIDENDRUM PARADISICOLUM Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Provincia Cartago: Cantón Paraíso, Reserva Natural de Tapantí, 9°45'32"N 83°44'47"W, 1300-1500 m, bosque tropical perennifolio, 25 Sep. 1996, pressed 25 Feb. 1997, ***L. Sánchez 434, J. García-Cruz, D. E. Mora & O. Rodríguez*** INB! (illustration voucher). Isotype: AMO! (flowers in spirit).

Epidendro stevensii Hágsater simile sed foliis brevioribus, sepalis petalisque brevioribus 7-nervatis, vesica breviore, labello cordiformi et clinandrio brevi.

Hierba epífita, rastrera, ramificada, 25 cm de largo. **Raíces** filiformes, producidas a lo largo de los tallos, ca. 1 mm de grosor. **Tallos** ramificados, tipo caña, teretes, flexuosos, el principal 15 x 0.1-0.25 cm, las ramas más cortas, 7-9 cm de largo, producidas del tallo principal y de cerca del ápice de las ramas anteriores. **Hojas** numerosas, distribuidas a lo largo de los tallos, subcoriáceas, las basales caedizas; vaina tubular, estriada, escariosa, 1-2 cm de largo; lámina articulada, angostamente lanceolada, ápice bilobado, 2-4.5 x 0.4-0.9 cm. **Espata** ausente. **Inflorescencia** apical, del tallo principal y de las ramas, racemosa, dística, 2-2.5 cm de largo; pedúnculo corto, ca. 5 mm de largo; cubierto completamente por una bráctea ovada, obtusa, 6-8 mm de largo. **Brácteas florales** conduplicadas, ligeramente más largas que el ovario, ovado-oblongas al extenderse, obtusas, 8-12 x 4-6 mm. **Ovario** inflado ventralmente en la mitad apical, 9-12 mm de largo. **Flores** 2-3, simultáneas, dísticas, el vientre contra le raquis, verdes. **Sépalos** entreabiertos, lanceolado-elípticos, obtusos, mucronados, 9-11-nervados, 6.5-7.5 x 2-2.5 mm; el **dorsal** obtuso; los **laterales** agudos, más anchos. **Pétalos** entreabiertos, lineares, obtusos, 7-nervados, 6-7 x 1 mm. **Labelo** unido a la columna, entero, cordiforme, agudo, cóncavo en posición natural, 4 x 3.5 mm; callo laminar en forma de "Y", unicarinado, la carina prolongándose desde el callo hasta el ápice de la lámina del labelo. **Columna** recta, corta, 3 mm de largo. **Clinandrio** corto, sinuoso. **Antera** obovoide, 4-locular. **Polinios** 4, semiovoides, lateralmente comprimidos, subiguales. **Rostelo** hendido, subapical. **Lóbulos laterales del estigma** cubriendo 1/3 de la cavidad estigmática. **Nectario** penetrando hasta la mitad del ovario, inflado, no ornamentado. **Cápsula** no vista.

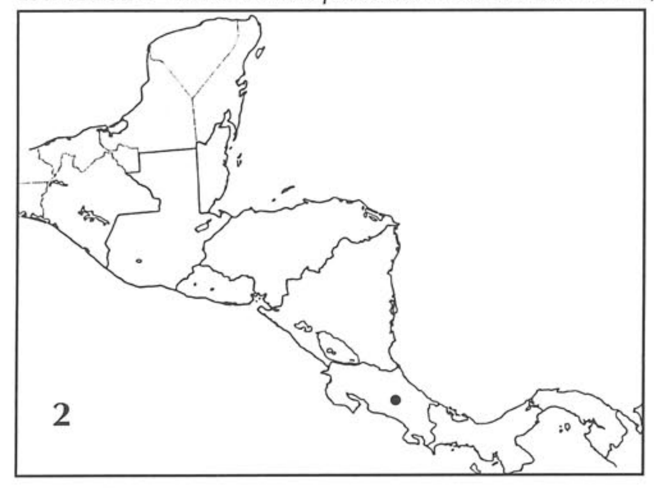
Repent, branched, epiphyte. **Roots** filiform, produced throughout the stems. **Stems** branched, from a main stem, flexuous, terete. **Leaves** distributed throughout the stems; sheaths striated, scariose; blade articulate, narrowly lanceolate, apex bilobed, subcoriaceous. **Inflorescence** apical from the main stem and branches; peduncle short, with a basal, ovate, obtuse bract. **Floral bracts** ovate-oblong, obtuse, conduplicate, slightly longer than the ovary. **Ovary** inflated ventrally in the apical half. **Flowers** 2-3, distichous, green. **Sepals** partly spreading, lanceolate-elliptic, mucronate; **dorsal** obtuse; **lateral** acute, wider than the dorsal sepal. **Petals** partly spreading, linear, obtuse. **Lip** entire, cordiform, acute; callus "Y" shaped, extending into a central keel running down to the apex of the lip. **Column** straight, short. **Clinandrium** short. **Anther** obovoid, 4-celled. **Pollinia** 4, semiovoid, laterally compressed. **Rostellum** slit. **Nectary** penetrating 1/2 of the ovary, inflated.

DISTRIBUTION AND ECOLOGY: Known only from the Natural Reserve of Tapantí, tropical rain forest, 1300-1500 m altitude. Flowering in cultivation in February.

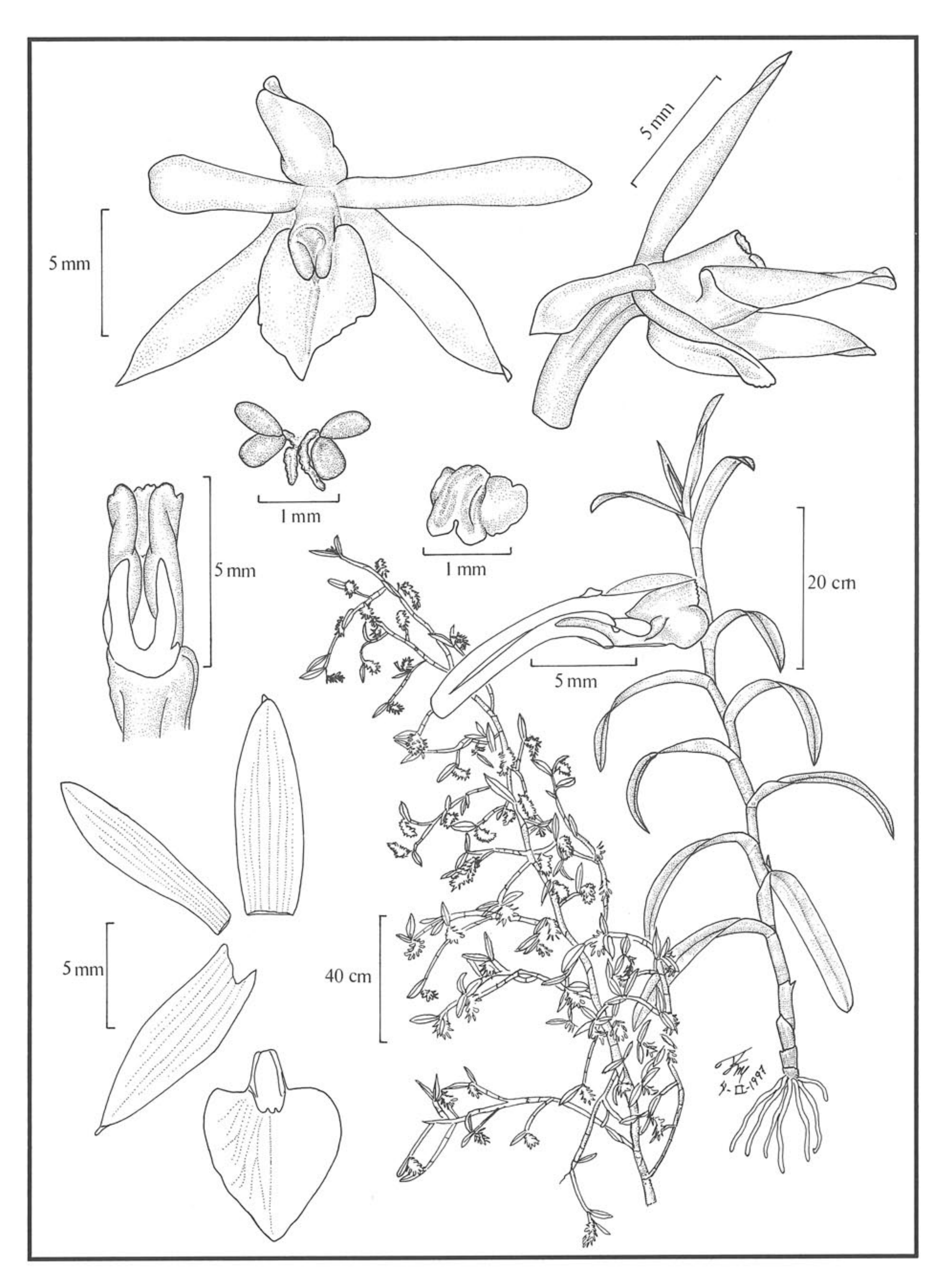
RECOGNITION: *Epidendrum paradisicolum* belongs to the *Epidendrum modestiflorum* Schltr. group and is distinguished by the branched, repent habit, main stem with shorter lateral branches, the leaves short and narrow (2-4.5 x 0.4-0.9 cm), 2-3 flowered distichous inflorescence, the flowers green, small, sepals 6.5-7.5 mm long, cordiform lip, and short clinandrium. It is easily confused with *E. stevensii* which is distinguished by its larger plants, leaves 4-7 cm long, ovary which forms an elongate vesicle, sepals 7-9 mm long, triangular-cordate lip, and reduced clinandrium. *Epidendrum flexicaule* Schltr. also has numerous leaves 3-8 cm long, the ovary which forms a short vesicle, the perianth segments 9-12 mm long, petals 2 mm wide, ovate-cordiform lip, the apex rounded, and reduced clinandrium.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*paradisicola*" inhabitant of Paradise, in reference to the locality where it was collected.



Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM PARAGUASTIGMA Hágsater & García-Cruz

Plate 367

EPIDENDRUM PARAGUASTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Puntarenas: San Vito; Camino a Cerro Paraguas, 8°46'54"N 82°58'42"W, 1200-1300 m, col. 2 Oct. 1996, ***L. Sánchez 459, J. García-Cruz & E. Lépiz*** INB! (illustration voucher). Isotypes: AMES! AMO! CR! K! MO! PMA! SEL! Clonotypes: 12 Nov. 1997 F! NY! STRI!

Epidendro platystigma Rchb. f. simile sed foliis anguste ellipticis, spalis lanceolatis acutis, labello ovato ad basem truncato, columna alba, differt.

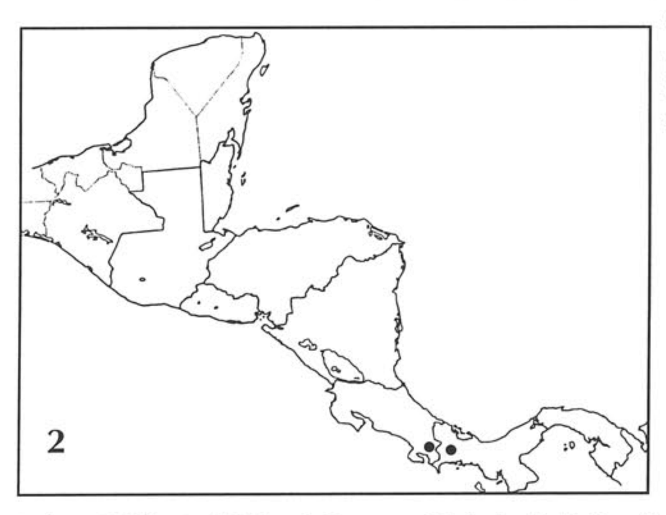
Hierba epífita, esencialmente monopodial, ramificada, ca. 170 cm de alto. **Raíces** basales, carnosas. **Tallos** teretes, tipo caña, ramificados, el principal 0.6-1.2 cm de grosor, los secundarios 0.2-0.5 cm de grosor. **Hojas** a lo largo del tallo principal, pero cuando se ramifica se caen, las hojas de las ramas persistentes; vaina tubular, rugoso-estriada, papirácea, 1.3-5.5 cm de largo; lámina angostamente elíptica, ápice bilobado a retuso, las del tallo principal 21-24.5 x 3.5-4 cm, las de las ramas secundarias 8-12 x 1.2-1.4 cm, las de las ramas terciarias 2.5-7 x 0.4-1.4 cm. **Espata** ausente. **Inflorescencia** apical, únicamente de las ramificaciones, florece una sola vez, racemosa, arqueada, 3-6 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.5-1 cm de largo; cubierto completamente por 1 bráctea, conduplicada, anchamente ovada, obtusa, 1-1.5 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, mucho más largas que el ovario, no imbricadas, lanceoladas, acuminadas, 1.1-1.4 x 0.4-0.7 cm. **Flores** 7-9, simultáneas, resupinadas, blancas, fragancia nocturna dulce, agradable. **Ovario** no ornamentado, cubierto completamente por la bráctea floral, ligeramente arqueado, 7.5-9.5 mm de largo. **Sépalos** entreabiertos, lanceolados, mucronados, 7-nervados, 10-11 x 2.7-3.6 mm; el **dorsal** obtuso; los **laterales** ligeramente oblicuos, agudos. **Pétalos** abiertos, oblanceolados, agudos, 7-nervados, 9-10 x 2-2.5 mm. **Labelo** unido a la columna, entero, cóncavo en posición natural, sin cubrir completamente a la columna, ovado, base truncada, agudo, 7.5-8.5 x 6-6.5 mm; unicalloso, callo laminar, tridentado; sin carinas evidentes. **Columna** recta, corta, tubular, 4-4.5 mm de largo. **Clinandrio** corto, diminutamente dentado. **Antera** oblonga, emarginada, con un par de procesos laterales petaloides, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 1/5 parte de la cavidad estigmática. **Nectario** penetrando 1/4 de la longitud del ovario. **Cápsula** no vista.

Epiphytic, monopodial, branching **herb**. **Stems** branched, terete. **Leaves** narrowly elliptic, apex bilobed, those of the main stem about twice the size of those of the branches. **Inflorescence** apical from the branches, racemose, arcuate. **Floral bracts** conduplicate, much longer than the ovary, lanceolate, acuminate. **Flowers** 7-9, simultaneous, resupinate, perianth white, fragrant. **Ovary** slightly arcuate. **Dorsal sepal** lanceolate, acute, slightly carinate, 7-veined. **Sepals** lanceolate,carinate, 7-veined; the **dorsal** obtuse; the **lateral** slightly oblyque, acute. **Petals** oblanceolate, acute, 7-veined. **Lip** entire, ovate, acute, base truncate; callus tridentate. **Column** straight, short. **Clinandrium** short, minutely dentate. **Anther** oblong, emarginate, with two petaloid lateral processes, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft, slightly shorter than the pollinia; viscidium semiliquid. **Nectary** penetrating 1/4 of the ovary.

OTHERS SPECIMENS: COSTA RICA: Puntarenas: Distrito San Vito; Camino a Cerro Paraguas, 8°46'54"N 82°58'42"W, *Sánchez 460, García-Cruz & Lépiz* AMO! CAS! COL!G! P! QCNE! UC! **PANAMÁ: Chiriquí:** San Ramón, headwaters of Río Caldera, *Dressler 3100* MO!

DISTRIBUTION AND ECOLOGY: Known from the Pacific slope, in cloud forest, from 1200 to 2000 m altitude. Flowering from September to October.

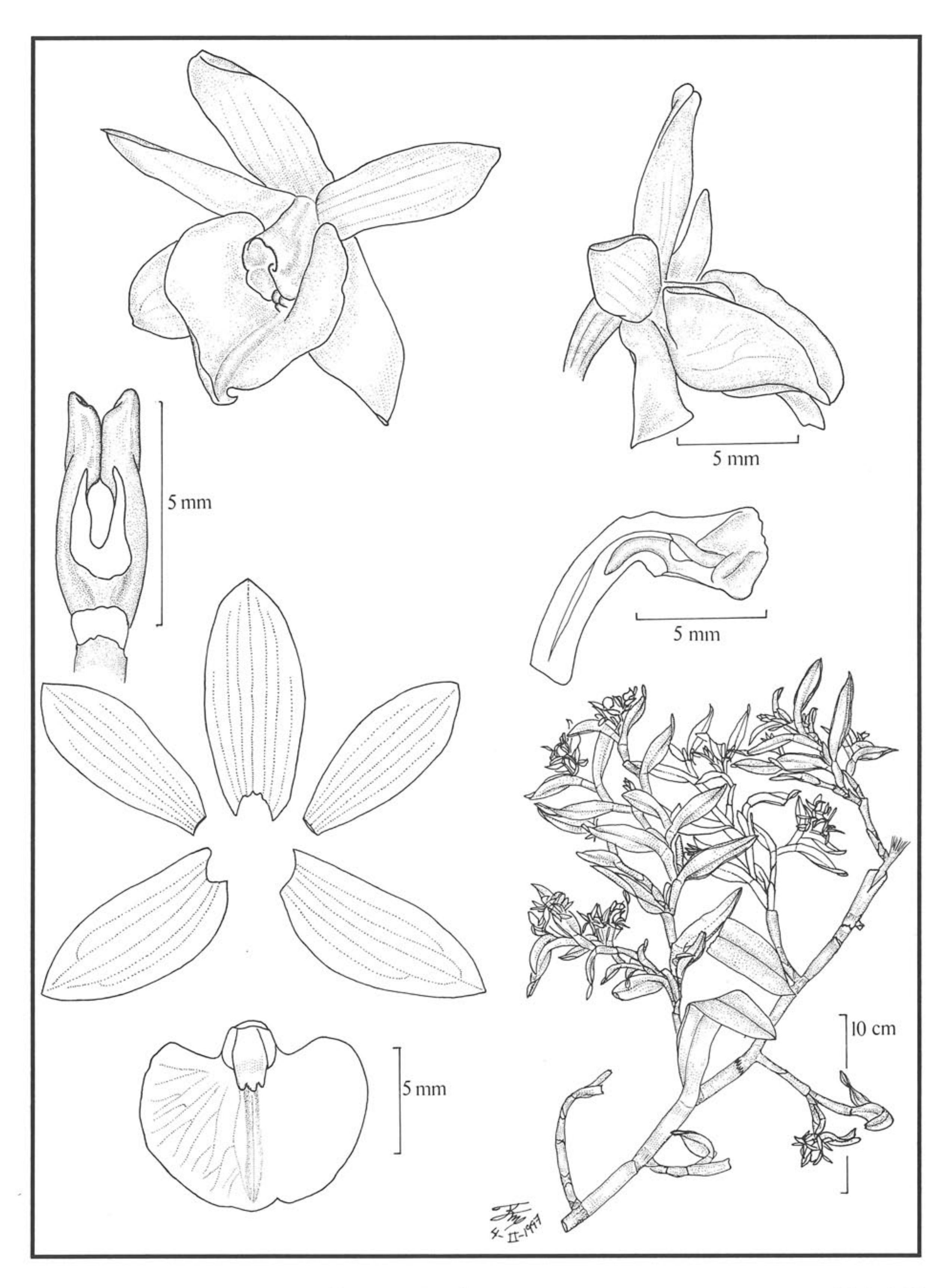
RECOGNITION: *Epidendrum paraguastigma* belongs to the *Epidendrum platystigma* group and can be recognized by its large plants with narrowly elliptic leaves, those of the main stem 21-24.5 x 3.5-4 cm, secondary and tertiary stems with leaves 2.5-12 x 0.4-1.4 cm, floral bracts, lanceolate, acuminate, flowers white, sepals lanceolate, 2.7-3.6 mm wide, lip ovate, acute, base truncate. *Epidendrum platystigma* has narrowly oblong-lanceolate leaves, sepals lanceolate, acute, lip cordiform, acute. *Epidendrum ramonianum* Schltr. has flowers white, column green, ovary arcuate, lip widely ovate, base truncate, callus tridentate.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named after the mountain on which it has been collected, the Cerro Paraguas, on the pacific slope, south of San Vito in Costa Rica.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PENNEYSTIGMA Hágsater & García-Cruz

Plate 368

EPIDENDRUM PENNEYSTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Alajuela: Cantón de San Ramón, Reserva de Tilarán, 10°19'55"N 84°47'50"W, 1600 m, col. 30 June 1994, ***D. Penneys** 86* AMO!

Epidendro campbellstigma Hágsater & García-Cruz simile sed sepalis petalisque ellipticis leviter mucronatis, labello reniformi et clinandrii margine erose.

Hierba epífita, esencialmente monopodial, hasta 100 cm de alto. **Raíces** basales, carnosas. **Tallos** teretes, tipo caña, ramificados,tallo principal 0.4-0.8 cm de grosor, tallos secundarios 0.3-0.5 cm de grosor. **Hojas** a lo largo del tallo principal, caedizas cuando ramificado, las hojas de las ramas persistentes; vaina tubular, rugosa, papirácea, blanquecina, 1-4 cm de largo; lámina elíptica, ápice oblicuamente bilobado, redondeado, las del tallo principal 11 x 2.5 cm, las de las ramas secundarias y terciarias 1.5-5 x 0.7-1.5 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, florece una sola vez, racemosa, erecta a arqueada, 4-6 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.8-1.2 cm de largo; ocasionalmente parcialmente cubierto por una bráctea, conduplicada, oblongo-ovada, obtusa, 1-1.4 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, mucho más largas que el ovario, no imbricadas, anchamente ovadas, agudas, pardas al secar, 0.7-1.3 x 0.6-0.8 cm. **Flores** 4-7, simultáneas, resupinadas, blancas. **Ovario** pedicelado, no ornamentado, cubierto completamente por las brácteas florales, recurvado, 5-6 mm de largo. **Sépalos** extendidos, elípticos, obtusos, ligeramente mucronados, 10.5-11.5 x 4-5 mm; el **dorsal** 7-nervado; los **laterales** oblicuos, 5-nervados. **Pétalos** extendidos, elípticos, obtusos, 5-nervados, 10-11 x 3.5-4.5 mm. **Labelo** unido a la columna, entero, abrazando a la columna, reniforme, base cordada, margen ligeramente revoluto en posición natural, 8-9 x 10-11 mm; unicalloso, callo laminar tridentado; unicarinado, carina prominente en la mitad apical de la lámina del labelo. **Columna** recta, corta, tubular, 4.5 mm de largo. **Clinandrio** corto, eroso. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves, granulosas; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 1/3 de la cavidad estigmática. **Nectario** penetrando 1/4 parte de la longitud del ovario. **Cápsula** no vista.

Epiphytic monopodial **herb. Stems** branched, terete. **Leaves** elliptic, apices obliquely bilobed, rounded, those of the main stem longer and deciduous, those of the branches smaller and persistent. **Inflorescence** apical, from the branches, racemose, distichous, erect to arcuate. **Floral bracts** conduplicate, longer than the ovary, widely ovate, acute. **Flowers** 4-7, simultaneous, resupinate, white. **Ovary** arcuate. **Sepals** spreading, elliptic, obtuse; the **dorsal** 7-veined; the **laterals** oblique, 5-veined. **Petals** spreading, elliptic, obtuse, 5-veined. **Lip** entire, reniform, base cordate; unicallose, callus laminar, tridentate; unicarinate, keel prominent along the apical half. **Column** straight, short. **Clinandrium** short, erose. **Anther** subspherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** penetrating 1/4 of the ovary.

OTHER SPECIMENS: COSTA RICA: Comunidad, cerca de cumbre de loma, *Dryer 1567* CR(slide AMO!) F! *Dryer 1568* F! **Alajuela:** Reserva Biológica Monteverde Río Peñas Blancas, 2 Ases, *Bello 991* MO! Reserva Forestal de Arenal Monteverde, Río Aguas Gatas, Finca Ulate, *Bello 1868* INB! Along road from San Ramón northward through Balsa, *Stevens 14164* AMO! F! MO! **Puntarenas:** Cantón Central, Reserva Biologica de Monteverde, *Hágsater 9411, Rodríguez, Bello, Carranza & Kaessbohrer* AMO! Idem. *Hágsater 9412, Rodríguez, Bello, Carranza & Kaessbohrer* AMOx2! **San José:** Casamata, camino Cartago-El Huarco, hacia San Cristóbal Sur, *García-Cruz 938, Sánchez & Lepiz* AMO!

OTHER RECORDS: *Hágsater 9411, Rodríguez, Bello, Carranza & Kaessbohrer* AMO(spirit)!

DISTRIBUTION AND ECOLOGY: Known from Monteverde Reserve and NE of the Fila de Bustamante. Epiphyte in cloud forest, from 1000 to 1600 m altitude. Flowering from May to September.

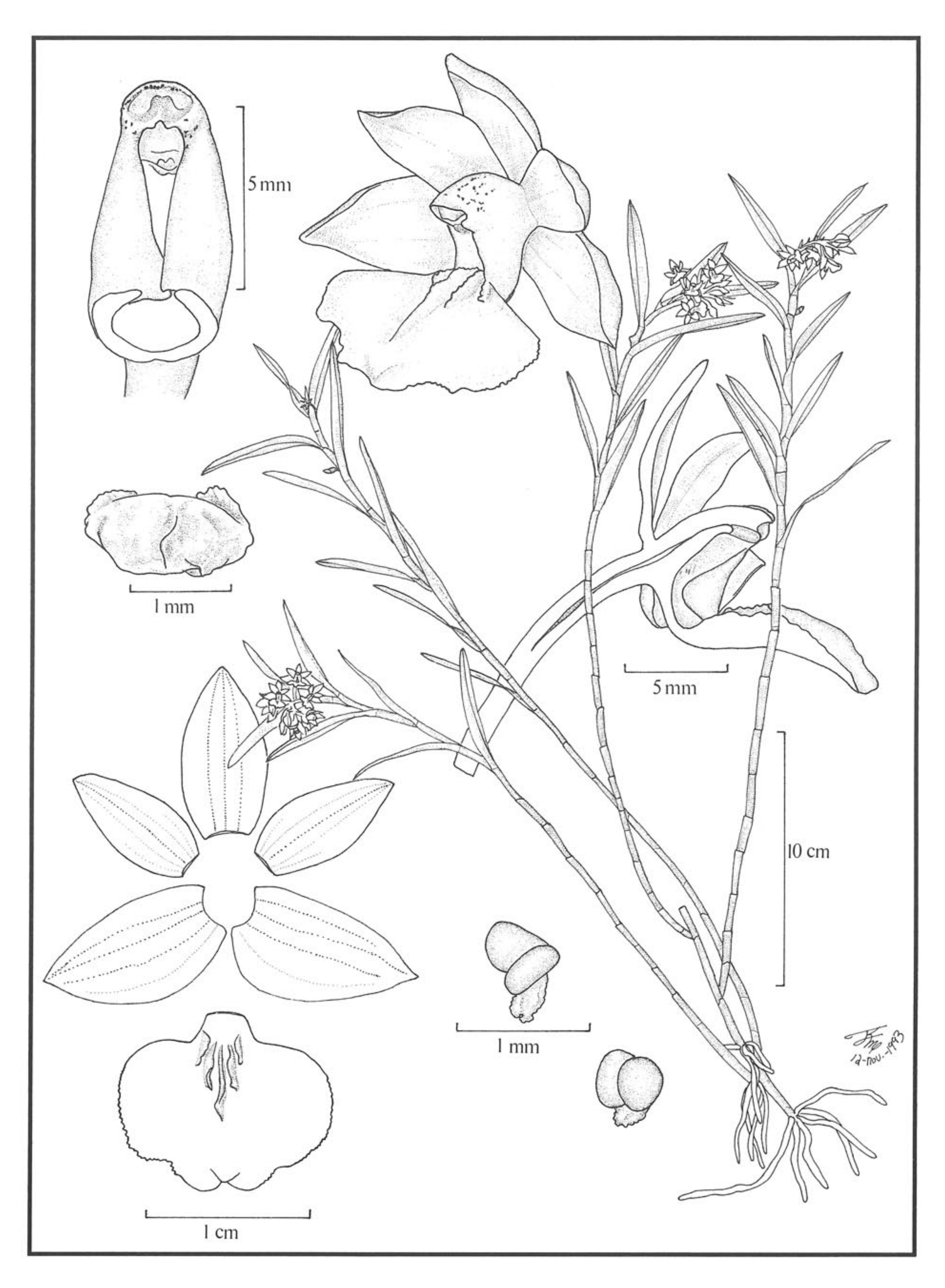
RECOGNITION: *E. penneystigma* is recognized by the leaves of the main stem 11 x 2.5 cm, those of the branches smaller, floral bracts not imbricated, flowers white, ovary arcuate, sepals elliptic, lip reniform, clinandrium erose. *Epidendrum campbellstigma* has flowers apple green, the lip white, sepals ovate, lip subreniform, clinandrium entire. *Epidendrum jefestigma* Hágsater & García-Cruz has flowers whitish green, lip subcircular, base truncate, callus bidentate.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named after D. Penneys, who participated in the collection of the species.

Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PENTACARINATUM Hágsater & Dodson

Plate 369

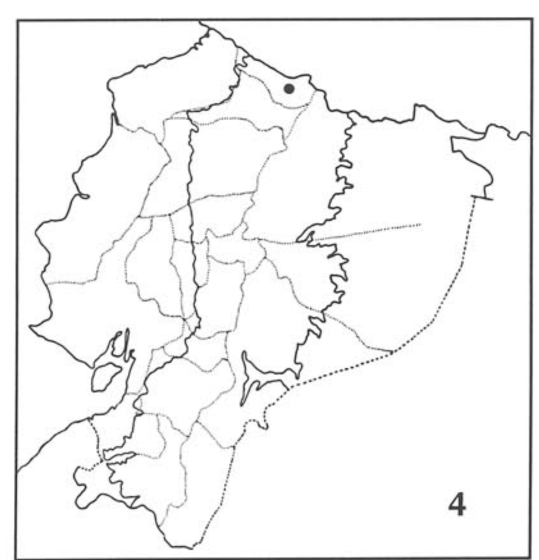
EPIDENDRUM PENTACARINATUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Carchi: Tulcán, km 42.3 Tulcán-Maldonado, 3530 m, col. 29 Apr. 1993, pressed 12 Nov. 1993, ***E. Hágsater 11256 et al.*** QCNE! (illustration voucher). Isotype: AMO! Clonotypes: 25 Nov. 1993 AMES! COL! MO!

Epidendro lloensi (Lindl.) Hágsater & Dodson simile sed labello fere orbiculari quinque carinas ferenti trilobato ad basem truncato, lobulo apicali parvulo bilobato ad sinum mucronato.

Hierba litófita, cespitosa, 18-56 cm de alto. **Raíces** basales, en ocasiones en la base de las ramificaciones inferiores, carnosas, delgadas, 1.5-3 mm de grosor. **Tallos** ramificados generalmente cerca del ápice, tipo caña, teretes, rectos, los principales 25-56 x 0.3-0.45 cm, las ramas 4-12 x 0.2-0.4 cm. **Hojas** numerosas, distribuidas a todo lo largo de los tallos, coriáceas, lisas, verdes; vaina tubular, estriada, 0.8-3 cm de largo; lámina angostamente lanceolada, ápice bilobado, margen entero, las de los tallos principales 7-8.9 x 1.0-1.2 cm, las de las ramas 4-8.8 x 0.6-0.9 cm. **Espata** ausente. **Inflorescencia** apical, de los tallos maduros, florece una sola vez, racemosa, arqueado-nutante, 4.6-6.5 cm de largo; pedúnculo terete, no ornamentado, ocasionalmente con una bráctea intermedia semejante a la floral, 10-25 mm de largo. **Brácteas florales** menos de la mitad del largo del ovario, angostamente triangulares, 3-7 mm de largo. **Flores** 6-15, resupinadas, casi simultáneas, generalmente estando abiertas casi todas al mismo tiempo, sépalos amarillo-verdosos, pétalos y labelo ocre-cobrizos, las carinas del disco teñidas de amarillo, columna verde amarillenta, ápice marcado de morado, antera color crema, sin fragancia. **Ovario** no inflado, terete, 10.5-17 mm de largo. **Sépalos** entreabiertos, libres, dorsalmente rugosos, carnosos, ovados, agudos, margen extendido, sin carina dorsal; el **dorsal** 3-nervado, 9-10 x 4.9-5.3 mm; los **laterales** oblicuos, 4-nervados, 11 x 6 mm. **Pétalos** entreabiertos, ovados, obtusos, margen extendido, membránaceos, 4-nervados, 9 x 4 mm. **Labelo** unido a la columna, formando una apertura amplia entre ambos, carnoso, casi orbicular, trilobado, 9.5 x 12-14 mm; ecalloso; disco 5-carinado, las carinas desiguales, la central llegando hasta el centro de la lámina, las laterales progresivamente más cortas; lóbulos laterales semiovados, margen apical irregular-eroso; lóbulo medio muy pequeño, bilobado, formado por dos lóbulos semicirculares, con un mucrón amplio en el seno apical. **Columna** arqueada, 5 mm de largo, con una apertura ventral alargada y angosta, los bordes laterales involutos. **Clinandrio** corto, entero. **Antera** obreniforme, 4-locular, sin ornamentación. **Polinios** 4, color amarillo pálido, obovoides lateralmente comprimidos, subiguales; caudículas suaves y granulosas, color crema, del mismo largo que los polinios; viscidio semilíquido, translúcido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** muy pequeños, reducidos. **Nectario** ausente, la cavidad formada por la columna y el labelo formando un incipiente pié de columna, no ornamentada. **Cápsula** no vista.

Lithophytic, caespitose **herb**. **Roots** fleshy, basal, sometimes from the lower branches. **Stems** branched usually above, covered by numerous, striated, leafy sheaths, blades narrowly lanceolate, apex bilobed, coriaceous. **Spathe** absent. **Inflorescence** apical, from the mature stems, racemose, arcuate-nutant. **Floral bracts** less than half as long as the ovary, narrowly triangular. **Flowers** 6-15, resupinate, nearly simultaneous, sepals greenish-yellow, petals and lip ochre-copper colored, the keels of the lip yellowish, column green, the apex marked with purple, anther cream colored, odorless. **Ovary** terete, slender, not swollen. **Sepals** partly spreading, free, fleshy, dorsally rugose, ovate, acute; the **dorsal** 3-veined; the **laterals** oblique, 4-veined. **Petals** ovate, obtuse, 4-veined. **Lip** united to the column, forming an elongate aperture, nearly orbicular, 3-lobe; ecallose; disc fleshy, 5-keeled, keels unequal, the central kell reaching the middle of the lip, the laterals progressively shorter; lateral lobes semiovate, apical margins finely irregular-erose; midlobe very small, formed by two semicircular lobules, with a wide mucro in the apical sinus. **Column** arched, with a narrow elongate ventral opening, the margins involute. **Clinandrium** short, entire. **Anther** obreniform, 4-celled. **Pollinia** 4, light yellow, obovoid, somewhat compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Lateral lobes of the stigma** very small, reduced. **Nectary** absent, but with a wide cavity formed by the column and the base of the lip, forming an incipient column foot, unornamented.



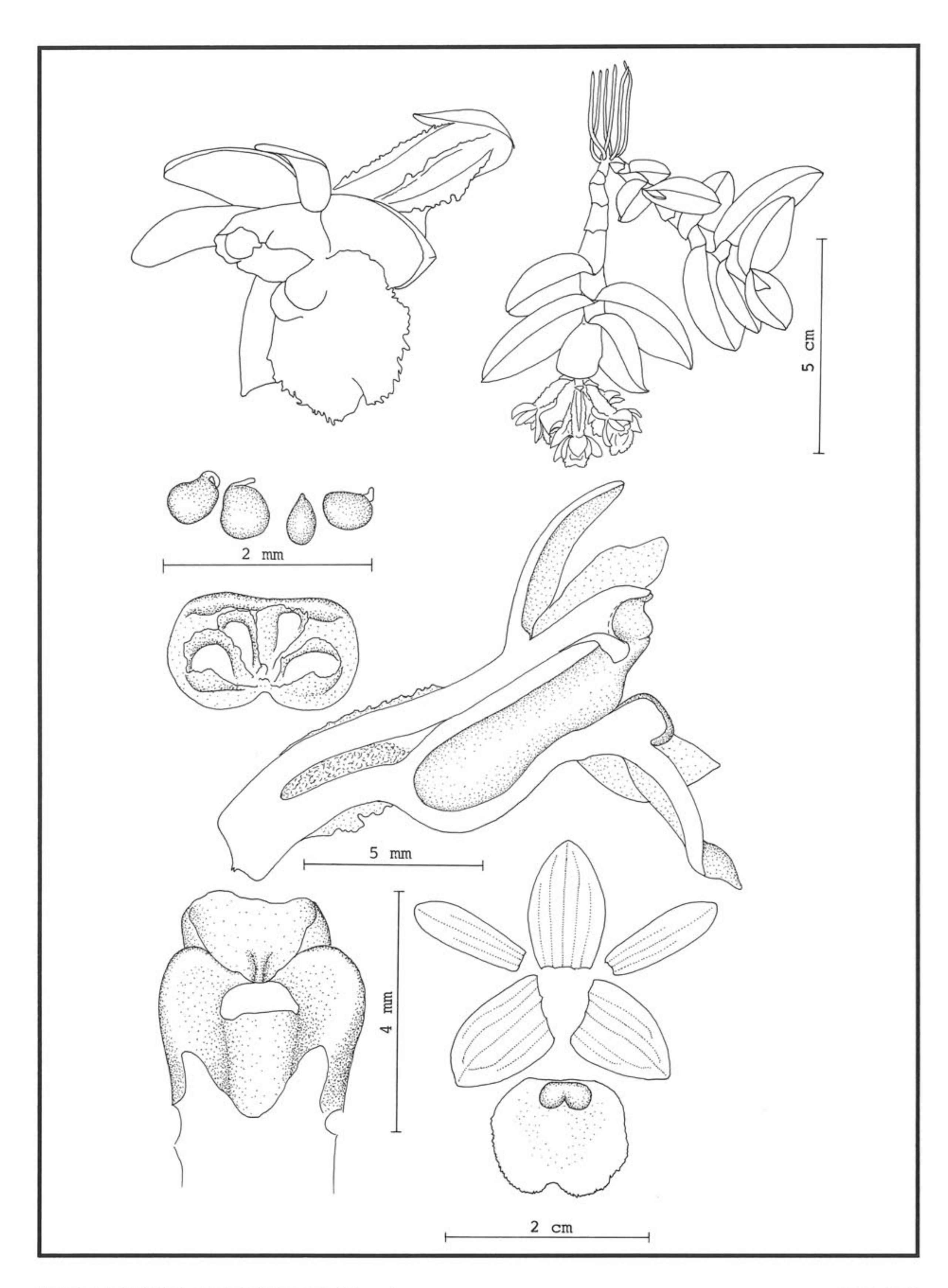
DISTRIBUTION AND ECOLOGY: ECUADOR: Carchi, in wet, mossy, scrub below the páramo at 3500 m altitude. Flowering in November.

RECOGNITION: *Epidendrum pentacarinatum* is recognized by its branching habit, with narrowly lanceolate leaves 6-12 mm wide, and the simple, nutant raceme with yellowish-copper flowers. The column has a very narrow ventral slit, with an incipient column foot, with the lip 5-keeled and suborbicular, the base truncate, not cuneate, the midlobe formed by two small semicircular lobes, the sinus widely mucronate. It is similar to *E. lloense*, but that species has 3 laminar, erose keels on the lip which is obovate, widely cuneate at the base. Both species have the column joined to the lip and form an elongate aperture with the sides involute and belong to the *Diothonea* group.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "πέντ" five and "καρίνα" keel, in reference to the five-keeled lip.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PLAGIOPHYLLUM Hágsater

Plate 370

EPIDENDRUM PLAGIOPHYLLUM Hágsater, *sp. nov.*

Holotype: PANAMA: Chiriquí: Volcán Barú, Cerro Punta, al N de Guadalupe, 2000-2300 m, col.15 Mar. 1981, pressed 19 Dec. 1981, ***E. Hágsater 6481, R. L. Dressler & C. Castro*** AMO! (illustration voucher). Isotype: STRI! Clonotype: 22 Dec. 1984 SEL!

Epidendro obliquifolio Ames, F.T. Hubbard & C. Schweinf. simile sed foliis transtris transversalibus purpureis destitutis, sepalis 5-nervatis, petalis 3-nervatis, labello subquadrato bicalloso in carinas non producto.

Hierba epífita, colgante, subcespitosa, 5-17 cm de largo. **Raíces** filiformes, 0.5-1 mm de grosor. **Tallos** tipo caña, lateralmente comprimidos, 3.5-13 cm de largo. **Hojas** 4-5(9), distribuidas a lo largo del tallo y en el mismo plano del tallo, desiguales, las basales y la apical generalmente más pequeñas; vaina tubular lateralmente comprimida, de 4-14 mm de largo; lámina ovado-lanceolada, aguda, oblicua, suculenta, de color verde grisáceo, sin barras transversales coloreadas, 19-50 x 0.8-1.8 cm. **Espata** 1, ocasionalmente 2, prominente, semiovada, conduplicada, ocultando totalmente el pedúnculo, 13.5-30 x 8.5-14 mm. **Inflorescencia** apical, del tallo maduro, subcorimbosa, florece una sola vez; pedúnculo corto, hasta de 5 mm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 2-4 mm de largo. **Flores** 3-5, resupinadas, simultáneas, verdes, concoloras, fragancia no registrada. **Ovario** formando una vesícula conspicua en la mitad apical, conspicuamente provisto de alas laceradas e hialinas en la mitad basal, 7.5-17 mm de largo. **Sépalos** entreabiertos, elípticos, obtusos, margen extendido, 5-nervados, 6.5-9 x 4-5 mm; los **laterales** ligeramente oblicuos. **Pétalos** entreabiertos, angostamente oblongo-oblanceolados, obtuso-redondeados, margen extendido, 3-nervados, las narvaduras laterales cortas, 6-7 x 2 mm. **Labelo** unido a la columna, entero, base truncada, subcuadrado, emarginado, margen finamente lacerado, 7-8 x 7-8 cm; bicalloso, los callos globosos. **Columna** corta, gruesa, el ápice arqueado, inflexo, 4 mm de largo. **Clinandrio** corto, muy carnoso, eroso. **Antera** reniforme, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas mucho más cortas que los polinios; viscidio no encontrado. **Rostelo** aparentemente entero, incurvado. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando 1/2 del ovario, no ornamentado, formando un vesícula prominente. **Cápsula** elipsoidal, 14-19 x 11-13 mm, con un pedicelo delgado de 2 mm de largo.

Subcaespitose, pendent epiphyte. **Roots** filiform. **Stems** cane-like, laterally compressed. **Leaves** 4-5(9), ovate-lanceolate, acute, oblique, succulent, grayish-green without any transverse bars. **Espathe** 1, occasionally 2, prominent semiovate, conduplicate, completely covering the peduncle. **Inflorescence** apical, subcorymbose. **Flowers** 3-5, resupinate, simultaneous, green, concolor. **Ovary** forming a conspicuous vesicle at the apical half, and winged at the base, the wings lacerate and hyaline. **Sepals** elliptic, obtuse, 5-veined; **laterals** somewhat oblique. **Petals** narrowly oblong-oblanceolate, obtuse to rounded, 3-veined, the laterals veins short. **Lip** united to the column, entire, subquadrate, apex emarginate, margin finely lacerate; bicallose, the callus globose. **Column** short, stout, apex inflexed. **Clinandrium** short, very fleshy, erose. **Anther** reniform, 4-celled. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles very much shorter than the pollinia; viscidium not found. **Rostellum** apparently entire, incurved. **Nectary** penetrating half the ovary, unornamented, forming a prominent vesicle. **Capsule** ellipsoid with a short pedicel.

OTHER SPECIMENS: PANAMA: Chiriquí: W of Cerro Punta, *Busey 670* AMO! PMA! Above Guadalupe, *Dressler 5535* AMO! K! SEL! N of Guadalupe, *Hágsater 6480 et al.* AMES!

DISTRIBUTION AND ECOLOGY: Growing in cloud forests around the volcán Chiriquí, at 2000-2300 m altitude. Flowering in December, fruits maturing in February.

RECOGNITION: *Epidendrum plagiophyllum* belongs to the *Epidendrum megalospathum* Rchb. f. group, and is distinguished by its 4-5 mm wide, 5-veined sepals, the lip square in proportion, with two callus at the base, and the concolor, green plant and flowers. It is closely related to *E. obliquifolium*, which has 3.6-4 mm wide, 3-veined sepals, the lip longer than wide with thickened keels on the disc, the leaves transversely barred with maroon and the flowers dotted with purple. Both are further related to -*Epidendrum stanhopeanum* Kraenzl. which has greenish flowers dotted with purple, the lip semicircular, deeply cordate, margin finely dentate. *Epidendrum miradoranum* Dodson & Bennett is much larger overall, with two orbicular spathes, a deeply cordate lip, and 5 mm wide petals. *Epidendrum escobarianum* Garay has a cordate, long, acuminate, deep red lip, and a small nectary which does not form a vesicle behind the sepals.

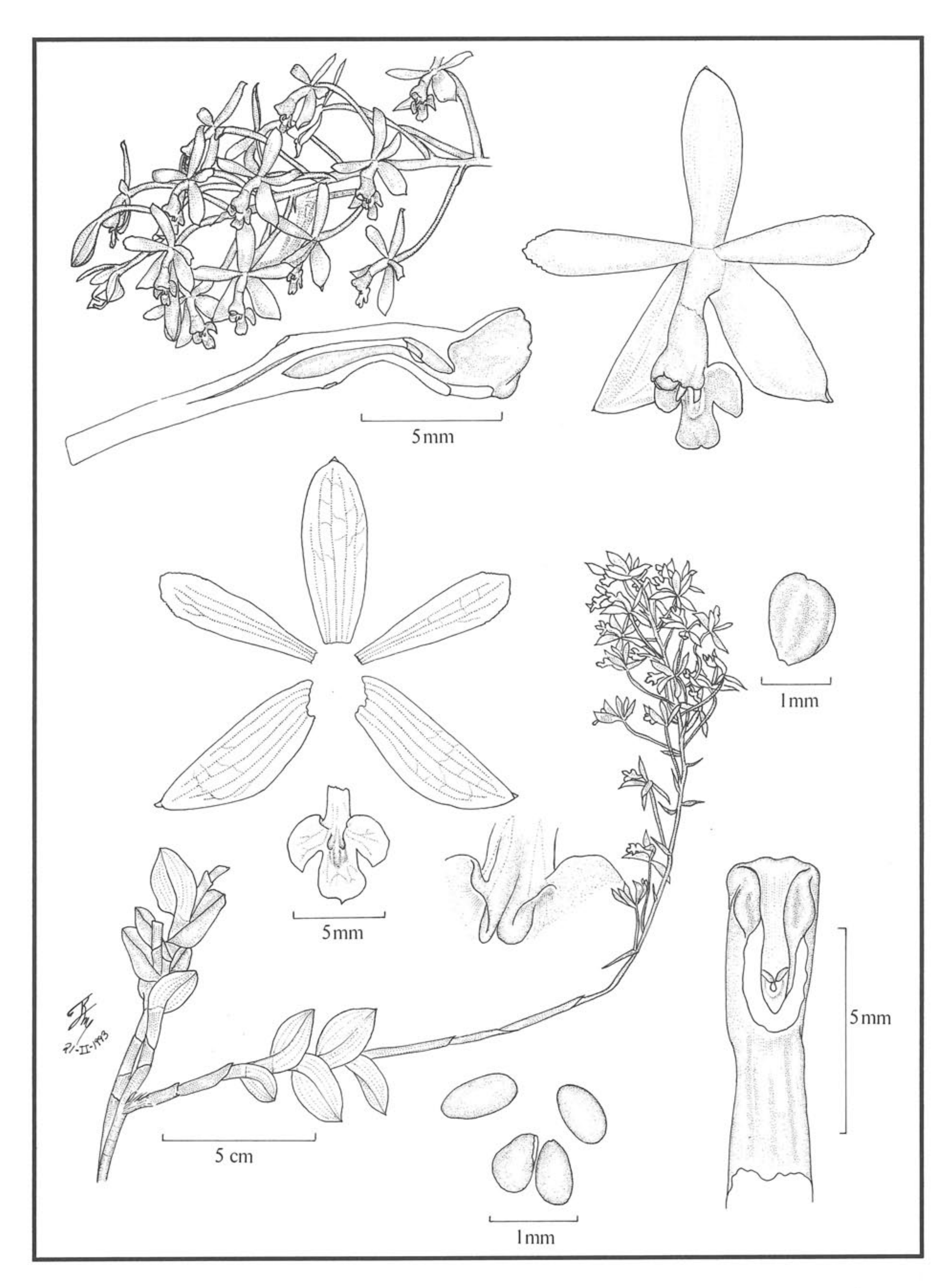
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CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*plagios*" oblique, and "*phyllon*" leaf, in reference to the oblique leaves, which are common to this species and *E. obliquifolium,* as well as most other species of the *E. megalospathum* group.

NOTE: The rostellum appears to be entire, with the viscidium not produced as is usual in *Epidendrum*. Though rare, this feature has been seen occasionally in other species of distantly related groups in the genus.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PLATYCLINIUM Hágsater & Dodson Plate 371

EPIDENDRUM PLATYCLINIUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Zamora-Chinchipe; new road Loja to Zamora, ca. km 25, ca. 2600 m, ***A. Hirtz 5760*** RPSC! (illustration voucher). Isotype: AMO! (spirit, slide).

Epidendro loxensi Lehm. & Kraenzl. simile sed habitu caespitoso, inflorescentia racemosa, pedunculo elongato, clinandrio ampliato.

Hierba terrestre o epífita, cespitosa. **Raíces** basales, 2-3 mm de grosor. **Tallos** ramificados, erectos, lateralmente comprimidos, hasta 1 m de largo. **Hojas** 4-14, distribuidas a lo largo de los tallos; vaina tubular-ancipitosa, estriada, 0.7-2 cm de largo; lámina ancha, ovado-elíptica, apiculada, margen entero, 1.6-3 x 0.7-1.8 cm. **Espata** ausente. **Inflorescencia** apical, erecta, racemosa, florece una sola vez, 16-27 cm de largo; pedúnculo alargado, terete, delgado, 8-12 cm de largo, cubierto por 1-3 brácteas tubulares, agudas, conduplicadas, ligeramente o no imbricadas, de 2.5-4 cm de largo. **Brácteas florales** angostas, acuminadas, de 1/4-1/2 del largo del ovario, 3-13 mm de largo. **Flores** 8-30, resupinadas, simultáneas, de color amarillo pálido u oro, el ápice de la columna y el labelo rojizo, con el disco y los callos blancos. **Ovario** no inflado, terete, delgado,15-25 mm de largo. **Sépalo dorsal** extendido, elíptico-obovado, obtuso, diminutamente mucronado, 5-nervado, 10 x 3.5 mm. **Sépalos laterales** extendidos, elípticos, agudos, mucronados, oblicuos, con quilla dorsal hacia el ápice, 5-nervados, 11 x 3.5 mm. **Pétalos** extendidos, oblanceolados, obtusos, margen finamente eroso hacia el ápice, 3-nervados, 9.5 x 2.5 mm. **Labelo** unido a la columna, trilobado, 5 x 5.5 mm; bicalloso, los callos como láminas engrosadas y sulcadas, prolongándose hacia el interior en dos cunículos a los lados; disco tricarinado; lóbulos laterales oblicuamente semiovados, agudos, 3 x 2 mm; lóbulo medio subcuadrado, ligeramente más ancho hacia el ápice, redondeado, apiculado, 3 x 3 mm. **Columna** delgada, arqueada hacia la mitad, 7-8 mm de largo. **Clinandrio** prominente, en forma de embudo, cubre a la antera, ondulado. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves, granulosas, mucho más cortas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cerca de 1/4 del largo de la cavidad estigmática. **Nectario** sin traspasar el perianto, algo dilatado hacia el fondo, no ornamentado. **Cápsula** no vista.

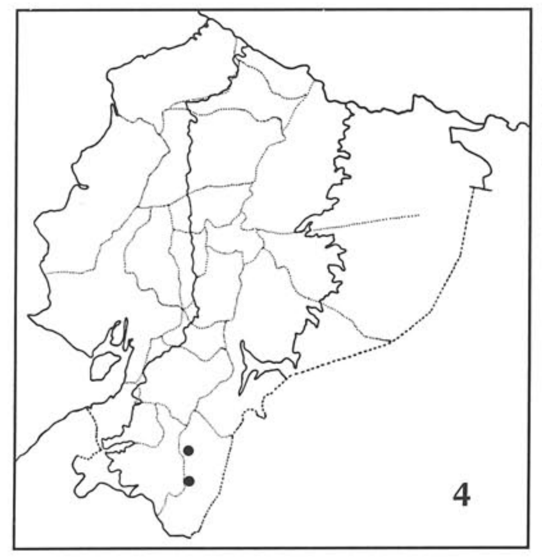
Caespitose terrestrial or epiphytic **herb**. **Stems** laterally compressed, branched. **Leaves** 4-14, ovate-elliptic, apiculate. **Spathe** absent. **Inflorescence** apical, erect, racemose, flowers only once; peduncle elongate, covered by tubular, acute, conduplicate bracts. **Floral bracts** acuminate, 1/4-1/2 the length of the ovary. **Flowers** 8-30, resupinate, simultaneous, pale golden yellow, the apex of the column and lip reddish, the disc and callus white. **Dorsal sepal** elliptic-obovate, obtuse, mucronate, 5-veined. **Lateral sepals** elliptic, acute, oblique, with apical dorsal keel, 5-veined. **Petals** oblanceolate, obtuse, apical margin finely erose, 3-veined. **Lip** united to the column, 3-lobed; bicallose, the callus like thickened sulcate keels, with a cunicle penetrating the lip on each side; disc 3-keeled; lateral lobes obliquely semiovate, acute; midlobe subquadrate, apiculate. **Column** thin, arched in the middle. **Clinandrium** prominent, funnel-shaped, undulate. **Nectary** not extending behind the perianth, dilated near the bottom, unornamented.

OTHER SPECIMENS: ECUADOR: Loja: Altos de Numbala, *Dalessandro 187* SEL! Cebadal prés Loja, *Poortmann 277* Px2!

DISTRIBUTION AND ECOLOGY: Known only from the region around Loja, Ecuador, at 2600-2900 m altitude.

RECOGNITION: The caespitose habit, with short, branching stems, the leaves ovate-elliptic, apiculate, recall species of the genus *Camaridium* (part of *Maxillaria*), however, the apical, elongate, many-flowered inflorescence, yellow flowers with the apex of the column and lip reddish, disc white, are somewhat reminiscent of an *Encyclia*, the 3-lobed lip and very prominent clinandrium make this species very distinct. It seems closely related to *Epidendrum loxense*, but that species has a short, paniculate inflorescence, yellow flowers and a short clinandrium.

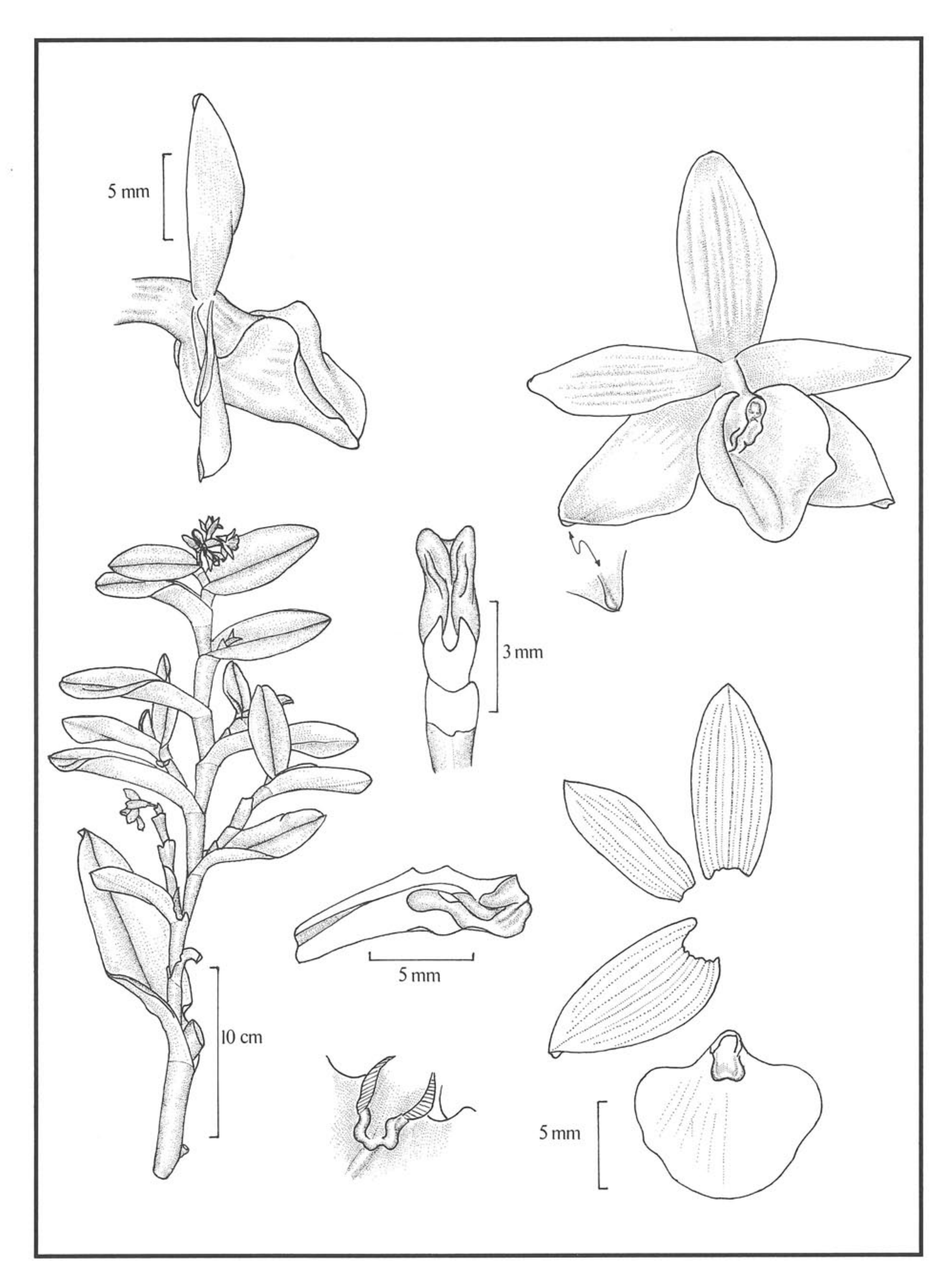
CONSERVATION STATUS: DD (data deficient).



ETYMOLOGY: From the Greek "*πλατυς*" broad and "*κλίνη*" bed, in reference to the very wide clinandrium or anther bed.

OTHER REFERENCES: Color photograph of the inflorescence prepared from the type printed in poster for VIII International Orchid Show of Ecuador, Orchid Society of Quito, February 11-13, 1994 as *Epidendrum loxense* Lehm. & Kraenzl.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM PLATYPHYLLOSTIGMA Hágsater & García-Cruz **Plate 372**

EPIDENDRUM PLATYPHYLLOSTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: PANAMA: Chiriquí: Cerro·Colorado, ca. 50 km NO of San Félix, 1400-1450 m, 20 Sep. 1977, ***R. L. Dressler 5713*** AMO! (illustration voucher).

Epidendro ramoniano Schltr. simile sed foliis latioribus, ovario recto, labello semiorbiculari, recedit.

Hierba epífita, esencialmente monopodial, hasta 1.5 m de alto. **Raíces** basales, carnosas. **Tallos** teretes, tipo caña, ramificados, el tallo principal 1-1.5 cm de grosor, los tallos secundarios 0.3-0.9 cm de grosor. **Hojas** distribuidas a lo largo de los tallos, las del principal deciduas, las de las ramas persistentes; vaina tubular, estriada, cartácea, 1.5-5 cm de largo; lámina anchamente elíptica, obtusa, ápice redondeado, ligeramente emarginado, las del tallo principal 13 x 4.5 cm, las de las ramas secundarias 5-9 x 2-3 cm, las de las ramas terciarias 3-6 x 1.3-2.2 cm. **Espata** ausente. **Inflorescencia** apical, únicamente de las ramificaciones, racemosa, dística, arqueada, 3-4 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.5-1 cm de largo; cubierto completamente por 1 bráctea, conduplicada, ovada, obtusa, 1 cm largo; raquis algo flexuoso. **Brácteas florales** conduplicadas, casi tan largas como el ovario, no imbricadas, anchamente oblongo-ovadas, obtusas, 0.6-1.3 x 0.6-1.1 cm. **Flores** 3-5, simultáneas, no resupinadas, verde pálido. **Ovario** pedicelado, no ornamentado, cubierto casi completamente por la bráctea floral, 8-15 mm de largo. **Sépalo dorsal** extendido, elíptico, obtuso, ligeramente carinado, 9-nervado, 10-11 x 4 mm. **Sépalos laterales** extendidos, ovado-elípticos, ligeramente oblicuos, agudos, ligeramente carinados, 9-nervados, 10-11 x 4-5 mm. **Pétalos** extendidos, oblongo-elípticos, agudos, 5-nervados, 10 x 3 mm. **Labelo** unido a la columna, entero, casi conduplicado en posición natural, envolviendo completamente a la columna, semiorbicular, base truncada, redondeado, 8-10 x 10-11 mm; unicalloso, callo laminar tipo plataforma, subcuadrado; sin carinas evidentes. **Columna** corta, recta, 5-6 mm de largo. **Clinandrio** corto, entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que la longitud de los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 1/5 parte de la cavidad estigmática. **Nectario** apenas penetrando hasta la inserción de los segmentos del perianto, subgloboso. **Cápsula** no vista.

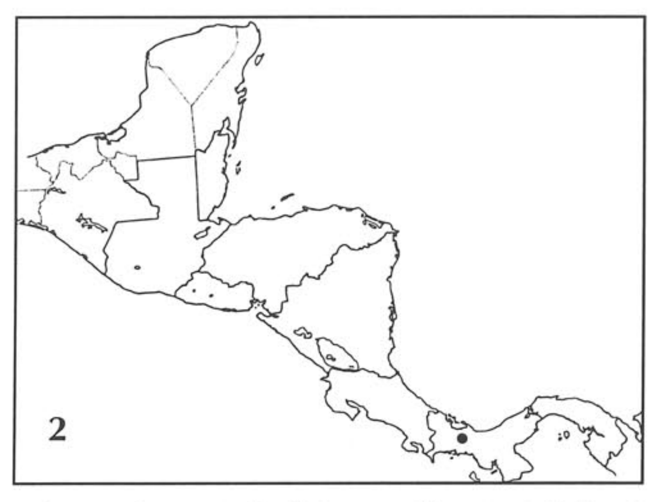
Epiphytic monopodial **herb**. **Stems** branched, terete. **Leaves** widely elliptic, obtuse, slightly emarginate, those of the main stem larger and deciduous, those of the branches smaller and persistent. **Inflorescence** apical from the branches, racemose, arcuate. **Floral bracts** conduplicate, as long as the ovary, widely oblonge-ovate, obtuse. **Flowers** 3-5, simultaneous, pale green. **Ovary** short, straight. **Dorsal sepal** elliptic, obtuse, slightly carinate, 9-veined. **Lateral sepals** ovate-elliptic, acute, slightly carinate, 9-veined. **Petals** oblong-elliptic, acute, 5-veined. **Lip** entire, semiorbicular, base truncate, rounded; unicallose, callus laminar, subquadrate, platform type; unkeeled. **Column** straight, short. **Clinandrium** short, entire. **Anther** subspheroid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Lateral stigma lobes** small. **Nectary** penetrating to the perianth only.

DISTRIBUTION AND ECOLOGY: Known only from the type locality in Panama. Growing as an epiphyte in rain forest, from 1400 to 1500 m altitude. Flowering in September.

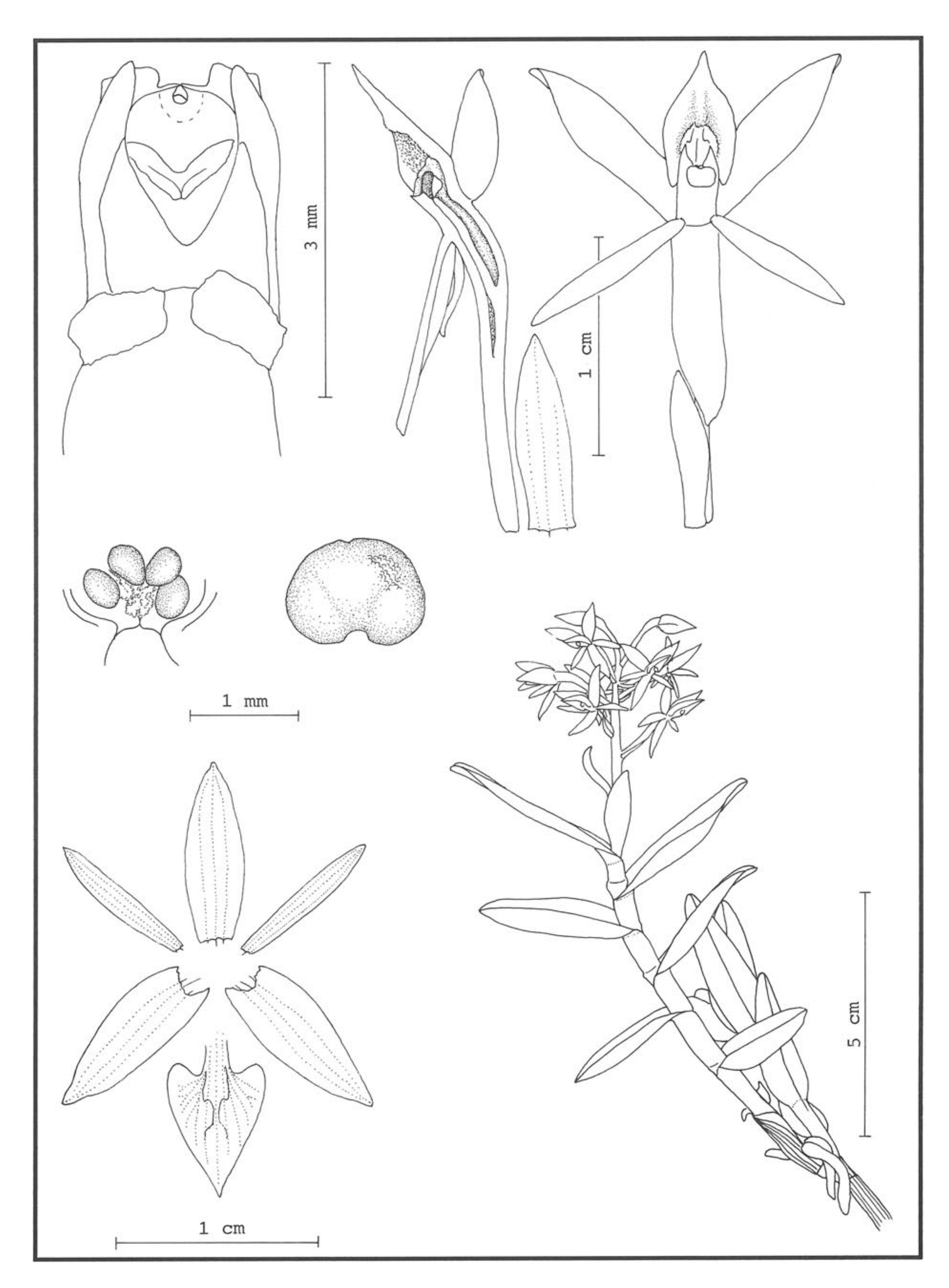
RECOGNITION: *Epidendrum platyphyllostigma* belongs to the *Epidendrum platystiga* Rchb. f. group and can be recognized by its large plants with big, elliptic leaves, on the main stems 13 x 4.5 cm, secondary and tertiary branches with leaves 3-9 x 1.3-3 cm, flowers pale green, ovary straight, sepals 4-5 mm wide, lip semiorbicular. *Epidendrum ramonianum* has narrower leaves, flowers white, column green, ovary arcuate, lip widely ovate, callus tridentate. *Epidendrum jefestigma* Hágsater & García-Cruz has narrower leaves, floral bracts widely ovate, lip subcircular, callus bilobate, clinandrium erose.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek *"platy"* broad, *"phyllos"* leaves, in reference to the wide leaves characteristic of this species, because *E. platyphyllostigma* has the widest leaves in the *E. platystigma* group species.



Authors: E. Hágsater & J. García-Cruz **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO **Apartado Postal 53-123, 11320 México, D.F., MÉXICO**



EPIDENDRUM POLYANTHOGASTRIUM Hágsater & Dodson

Plate 373

EPIDENDRUM POLYANTHOGASTRIUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: [Loja:] Loja-Machala, 2000 m, hort. Bot. Gart. Heidelberg, hort. Mexico, 7 Aug. 1983, ***W. Rauh 38304 sub E. Hágsater 6872*** QCNE! (illustration voucher). Isotype: AMO! Clonotypes: 22 June 1984 AMO! MO! QCNE! SEL! USM! ***sub E. Hágsater 11469*** 13 May 1998 COL! ***sub Hágsater 11472*** 19 June 1996 K!

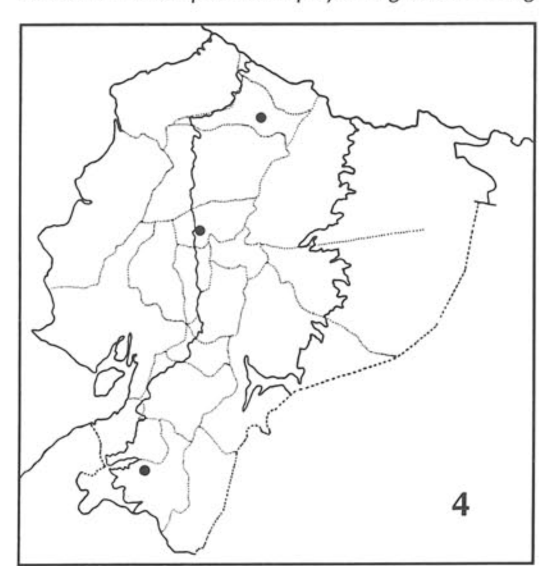
Epidendro megagastrio Lindl. simile sed floribus minoribus et numerosioribus, labello triangulari-cordiformi.

Hierba epífita, reptante, 12-18 cm de alto. **Raíces** basales, delgadas, carnosas, blancas, 1.0-1.5 mm de grosor. **Tallos** delgados, tipo caña, teretes, rectos, carnosos, formados de 6-7 entrenudos, originándose del 4º ó 5º nudo del tallo anterior, 5.5-11 x 0.3-0.5 cm, la mitad basal cubierta por vainas no foliosas, con el tiempo se deshacen, dejando el tallo desnudo. **Hojas** 4-6, desiguales, distribuidas hacia la mitad apical del tallo; vainas articuladas, lisas, verde-rojizas cuando frescas, estriadas y pardas cuando secas, 3-14 mm de largo; lámina algo carnosa, ovada, ápice bilobado, sulcada, con una quilla baja en el dorso, más prominente hacia la base y el ápice, coloración verde, 2-4.1 x 0.9-1.3 cm. **Espatas** 1-2, conduplicadas, angostamente semiobovadas, obtusas, 1-1.7 x 0.4-0.5 cm. **Inflorescencia** apical, racemosa, erecta, del crecimiento maduro, florece una sola vez, corta; pedúnculo ligerament más largo que la espata; raquis 10-20 mm de largo. **Brácteas florales** triangulares, acuminadas, más cortas que el ovario, 2-9 mm. **Ovario** pedicelado, inflado ventralmente en el cuarto a un tercio apical, de sección circular, no ornamentado, 10-13 mm. **Flores** [2]6-7, no resupinadas, simultáneas, verde-cobrizo, columna verde pálido. **Sépalo dorsal** extendido, angostamente lanceolado, agudo, margen ligeramente revoluto, 3-5-nervado, 9-9.5 x 2.5-3 mm. **Sépalos laterales** entreabiertos, angostamente lanceolados, oblicuos, agudos, 3-5-nervados, 8-9 x 3.7-4.1 mm. **Pétalos** extendidos, lineares a linear-elípticos, agudos, 3-nervados, 8-8.5 x 1-1.1 mm. **Labelo** entero, abrazanfdo a la columna sin ocultarla, triangular a cordiforme, agudo, base cordada a truncada, 6-6.5 x 4.3-4.7 mm; callo en forma de "T", prolongádose en una quilla central que va más allá de la mitad de la lámina; disco excavado, diminutamente papiloso. **Columna** corta, gruesa, 3 mm de largo. **Clinandrio** corto, entero. **Antera** reniforme, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más largas que los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de 2/3 partes del largo de éste. **Nectario** penetrando 1/4 ó 1/3 parte del ovario, ensanchado ligeramente dentro del ovario sin formar vesícula, no ornamentado. **Cápsula** no vista.

Repent, epiphytic **herb**. **Stems** terete, fleshy, the new stem arising from the middle of the previous stem. **Leaves** 4-6, unequal, distributed throughout the apical half of the stem; sheaths smooth, green dotted with purple; blades articulate, ovate, apex bilobed, green. **Spathes** 1-2, conduplicate, narrowly semiobovate, obtuse. **Inflorescence** apical, erect, from mature stem, flowering only once, racemose. **Floral bracts** triangular, acuminate, shorter than the ovary. **Ovary** somewhat inflated ventrally at the apical one-third to one-fourth, unornamented. **Flowers** [2]6-7, non-resupinate, simultaneous, coppery green, column light green. **Dorsal sepal** narrowly lanceolate, acute, margins somewhat revolute, 3-5-veined. **Lateral sepals** narrowly lanceolate, oblique, acute, 3-5-veined. **Petals** linear to linear-elliptic, acute, 3-veined. **Lip** entire, triangular to cordiform, acute, base cordate to truncate, sides of the lip upturned in natural position so as to embrace the apex of the column without hiding it; callus T-shaped, extending into a central keel that surpasses the excavated area; disc excavate, minutely papillose. **Column** short, thick. **Clinandrium** short, entire. **Anther** reniform, 4-celled. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles granulose, slightly longer than the pollinia; viscidium semiliquid, transparent. **Nectary** penetrating 1/3-1/4 of the ovary, somewhat widened within, unornamented.

OTHER RECORDS: ECUADOR: Cotopaxi: Arriba de Macuchi, *Hágsater 7586, Thurston & Latta* AMO! Idem. *Hágsater 7587* AMO! **Imbabura:** "Otavalo", *Hirtz sub Kennedy sub Hágsater 5914* AMES! AMOx2! COL! CUVC! K! NY! QCNE! RPSC!

RECOGNITION: *Epidendrum polyanthogastrium* belongs to the *E. megagastrium* group which is recognized by the sympodial habit, with new stems arising from a middle internode of the previous stem, the presence of an ovate spathe and the papillate, excavated disc of the lip. It is recognized by its smaller, non resupinate flowers (sepals ca 9 mm long), up to 8 per inflorescence, green with a triangular cordate lip in a somewhat horizontal position. *Epidendrum amplexigastrium* Hágsater has a trilobed and cuneate lip, with the lateral lobes semiobovate and directed forwards and embracing the column in natural position so that the lobes are mounted one upon the other over the column, hiding its apex. *Epidendrum megagastrium* has a triangular, cordate lip, the lateral lobes do not cover the column, sepals 20 mm long. *Epidendrum quisayanum* Schltr. is recognized by the bright purple flowers.

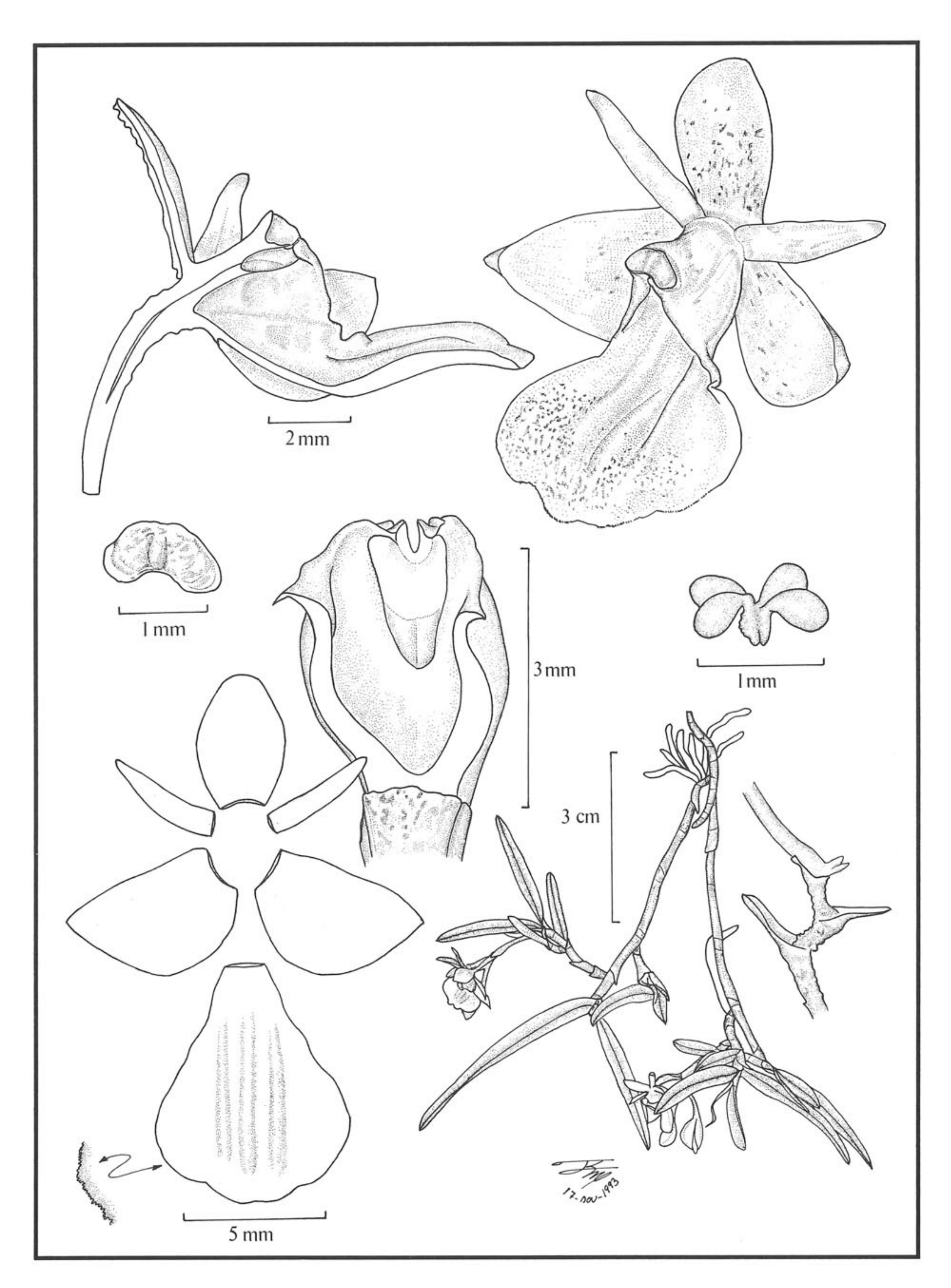


DISTRIBUTION AND ECOLOGY: Ecuador from the western slopes of the Andes from Loja to Imbabura ca. 2000 m altitude, in dry forest. Flowering in Mexico in June-August.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*poly*" many, "*anthos*" flowers, in reference to the usual number of flowers reported and "*gastrium*" stomach, in reference to the excavated, papillate disc of the lip.

Authors: E. Hágsater & C. H. Dodson **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM POMACOCHENSE Hágsater

Plate 374

EPIDENDRUM POMACOCHENSE Hágsater, *sp. nov.*

Holotype: PERU: San Martín: Mirador, between Moyobamba and Pomacochas, just before Pomacochas, 1700 m, pressed 24 Nov. 1993, ***Hort. J. & L. Orchids sub E. Hágsater 11391*** AMO! (illustration voucher).

Epidendro lloensi (Lindl.) Hágsater & Dodson simile sed habitu minore, labello obovato-cuneato.

Hierba epífita, escandente, ramificada, 15 cm de alto o más. **Raíces** basales, tanto en el tallo basal como en la base de los tallos superiores, carnosas, delgadas, 2 mm de grosor. **Tallos** tipo caña, teretes, ramificados, rectos, 2-6 x 0.15 cm. **Hojas** 3-4 por tallo, agregadas hacia el ápice del tallo, subcoriáceas; vaina tubular, estriada, 0.6-1.2 cm de largo; lámina linear-lanceolada, ápice desigualmente bilobado, margen entero, lisa, verde claro, 1.2-4 x 0.3-0.4 cm. **Espata** ausente. **Inflorescencia** apical, en las ramificaciones maduras, florece una sola vez, racemosa, arqueado-nutante, 2 cm de largo; pedúnculo terete, no ornamentado, 6-8 mm de largo; raquis flexuoso, ornamentado con pocas verrugas. **Brácteas florales** mucho más cortas que el ovario, angostamente triangulares, ca. 2.5 mm de largo. **Flores** 2-3, resupinadas, simultáneas, sépalos, pétalos y columna rojo-cobrizo, labelo rojo ladrillo oscuro, brillante, antera teñida de rojo-ladrillo, sin fragancia. **Ovario** no inflado, terete, ornamentado, escasamente verrugoso, 7-9 mm de largo. **Sépalos** extendidos, libres, glabros, membranáceos. **Sépalo dorsal** elíptico, redondeado, margen extendido, no carinado, dorsalmente ornamentado, escasamente verrugoso, 3-nervado, 4.6 x 3.1 mm. **Sépalos laterales** oblicuamente ovados, obtusos, sin carina dorsal, 3-nervados, 5.5 x 3.8 mm. **Pétalos** extendidos, linear-triangulares, obtusos, margen extendido, membranáceos, 3-nervados, 4.2 x 1 mm. **Labelo** unido a la columna, formando una apertura amplia, obovado-cuneado, carnoso, margen apical ligeramente 4-lobado, finamente eroso, 8.4 x 6.7 mm; ecalloso; disco con tres quillas romas, lisas, llegando las tres cerca del ápice del labelo. **Columna** algo recurvada hacia el ápice, gruesa, con una apertura ventral deltoide, el borde lateral ligeramente revoluto, 4 mm de largo. **Clinandrio** corto, entero. **Antera** obreniforme, no ornamentada, 4-locular. **Polinios** 4, color crema, obovoides lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del mismo largo que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cortos. **Nectario** una cavidad formada por la columna y el labelo, triangular, amplia, no ornamentada. **Cápsula** no vista.

Scandent, branching epiphyte. **Roots** fleshy, from the base of stems and branches. **Stems** branched, covered by numerous, striate, leafy sheaths, blades linear-lanceolate, unequally bilobed, subcoriaceous. **Inflorescence** apical, from the apex of the mature branches, racemose, arcuate-nutant. **Floral bracts** much shorter than the ovary, narrowly triangular. **Flowers** 2-3, resupinate, simultaneous, sepals, petals and column reddish-bronze, lip deep brick-red, anther tinged with brick red, without fragrance. **Ovary** slender, not swollen. **Sepals** spreading, free, membranaceous. **Dorsal sepal** elliptic, rounded, 3-veined. **Lateral sepals** obliquely ovate, obtuse, 3-veined. **Petals** linear-triangular, obtuse, 3-veined. **Lip** united to the column forming a wide funnell, ovate-cuneate, the apical margin somewhat 4-lobulate, apical margins finely erose; ecallose; disc fleshy, 3-keeled. **Column** slightly recurved at the apex, with a deltoid ventral opening below the apex, the margins somewhat revolute. **Clinandrium** short, entire. **Anther** obreniform, 4-celled. **Pollinia** 4, cream-colored, obovoid, somewhat compressed; caudicles soft and granulose; viscidium semi-liquid. **Rostellum** subapical, slit. **Nectary** a wide cavity formed by the column and the base of the lip, unornamented.

DISTRIBUTION AND ECOLOGY: Known only from the type collection, from the eastern slope of the Andes in central Peru, 1700 m altitude. Flowering in cultivation in the northern hemisphere in July and November.

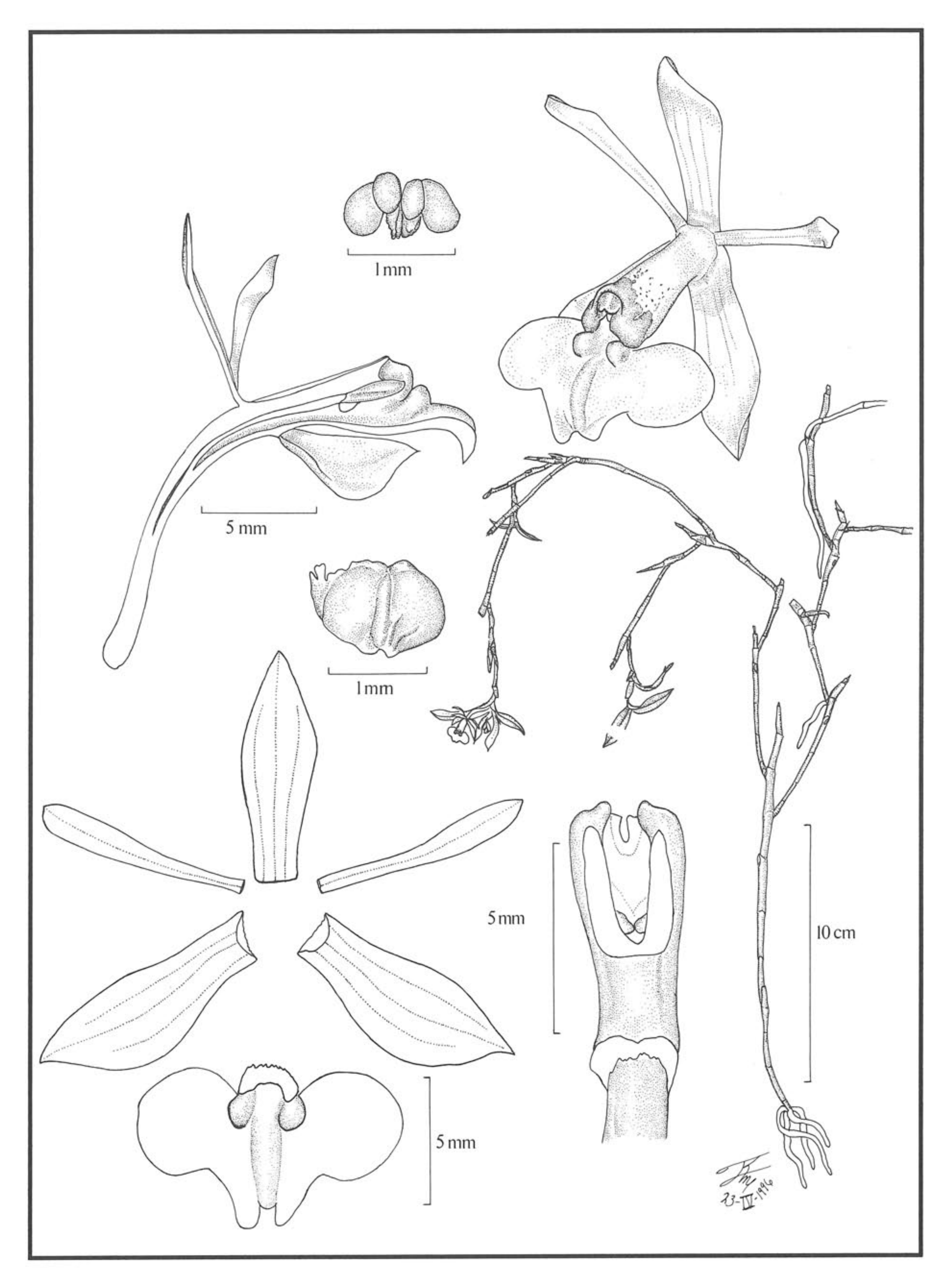
RECOGNITION: *Epidendrum pomacochense* is recognized by the small plant habit and flowers for the *Diothonea* group, the obovate-cuneate lip, with three low, rounded keels running down the middle, the opening between the column and lip is wide, oblique and somewhat elongate, the margin slightly revolute. *Epidendrum lloense* has three laminar, erose keels on the lip, the leaves being about 1.2 cm wide.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In reference to the locality of Pomacochas, in the Department of San Martín, close to which the plant was collected.



Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM POMECENSE Hágsater

Plate 375

EPIDENDRUM POMECENSE Hágsater, *sp. nov.*

Holotype: COLOMBIA: Boyacá; Río Pómeca, km 23 Barbabosa-Tunjá, 2400 m, col. 17 Mar. 1996, pressed 23 May 1996, ***E. Hágsater 11504, P. O. Valdivieso. G. R. Schnitter & C. L. Patiño de Ruiz*** COL! Isotypes: AMO! K! SEL! (illustration voucher). Clonotype: 18 Nov. 1996 AMES!

Epidendro karstenii Rchb. f. simile sed floribus majoribus et paucis, labello lobulis lateralibus suborbicularibus quam apicali majoribus, lobulo apicali cuneato et emarginato.

Hierba epífita, simpodial, reptante, 40 cm de alto. **Raíces** gruesas, carnosas, blancas, de la base del tallo inferior y ocasionalmente de la base de los tallos de la parte superior, 2.2-2.4 mm de grosor. **Tallos** delgados, tipo caña, teretes, ligeramente engrosados, lateralmente comprimidos en la parte apical, formados de 8-9 entrenudos, originándose del 5º, 6º y 7º entrenudo, generalmente produciendo un solo crecimiento nuevo, raramente 2 ó 3 del mismo tallo, progresivamente más cortos, 3-10 x 0.15-0.25 cm, formando cadenas flexuosas. **Hojas** 3-4 distribuidas hacia el ápice del tallo; vaina parda, tubular, estriada, 7-12 mm de largo; lámina lanceolada, aguda, delgada, con una quilla en la parte dorsal, 2.5-2.7 x 0.6-0.7 cm. **Espata** ausente. **Inflorescencia** apical, del crecimiento maduro, racemosa, florece una sola vez, corta, nutante, 5-10 mm de largo. **Flores** 2-3, resupinadas, sucesivas, concoloras, verdes con manchas morado-rojizas sobre el ápice de la columna, sin fragancia. **Ovario** terete, no inflado, 12 x 1.2 mm. **Sépalo dorsal** extendido, elíptico, agudo, 3-nervado, 8.4 x 3.6 mm. **Sépalos laterales** inflexos, elípticos, oblicuos, agudos, 3-nervados, 9.5 x 3.5 mm. **Pétalos** extendidos, linear-oblanceolados, obtusos, 1-nervados, 8 x 1.2 mm. **Labelo** unido a la columna, trilobado, cordado, margen entero, 5 x 10.4 mm; bicalloso, callos globosos; disco con una quilla roma muy baja que forma el mucrón apical; lóbulos laterales suborbiculares, 4 mm de diámetro; lóbulo medio trapezoide, emarginado, mucronado en el seno. **Columna** delgada, ligeramente ensanchada hacia el ápice, 6 mm de largo. **Clinandrio** reducido, entero. **Antera** transversalmente elipsoide, con una quilla roma al frente, 4-locular. **Polinios** 4, ovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, del mismo largo de los polinios; viscidio semilíquido transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cortos, menos de 1/4 de la cavidad estigmática. **Nectario** corto, penetrando 1/4 del ovario, liso interiormente. **Cápsula** no vista.

Sympodial epiphytic **herb**. **Roots** mainly from the basal stem, fleshy. **Stems** thin, terete, produced from 5-7th internode near the top of the previous stem, progressively shorter. **Leaves** 3-4, distributed near the apex of the stem, blade lanceolate, acute, thin. **Inflorescence** apical, racemose, nutant. **Flowers** 2-3, resupinate, successive, green with the apex of the column reddish-purple. **Ovary** thin, not inflated. **Sepals** elliptic, acute, 3-veined. **Petals** linear-oblanceolate, obtuse, 1-veined. **Lip** 3-lobed, cordate; bicallose; disc with a central low keel running down the center to form the apical mucro; lateral lobes suborbicular; midlobe trapezoidal, emarginate, mucronate. **Clinandrium** reduced, entire. **Nectary** short, penetrating 1/4 of the ovary, unornamented.

DISTRIBUTION AND ECOLOGY: Recorded from the Cordillera Oriental, in the upper eastern watershed of the Río Magdalena and the province of Boyacá. Epiphytic on trees along the river at 2400 m altitude. Flowering in March.

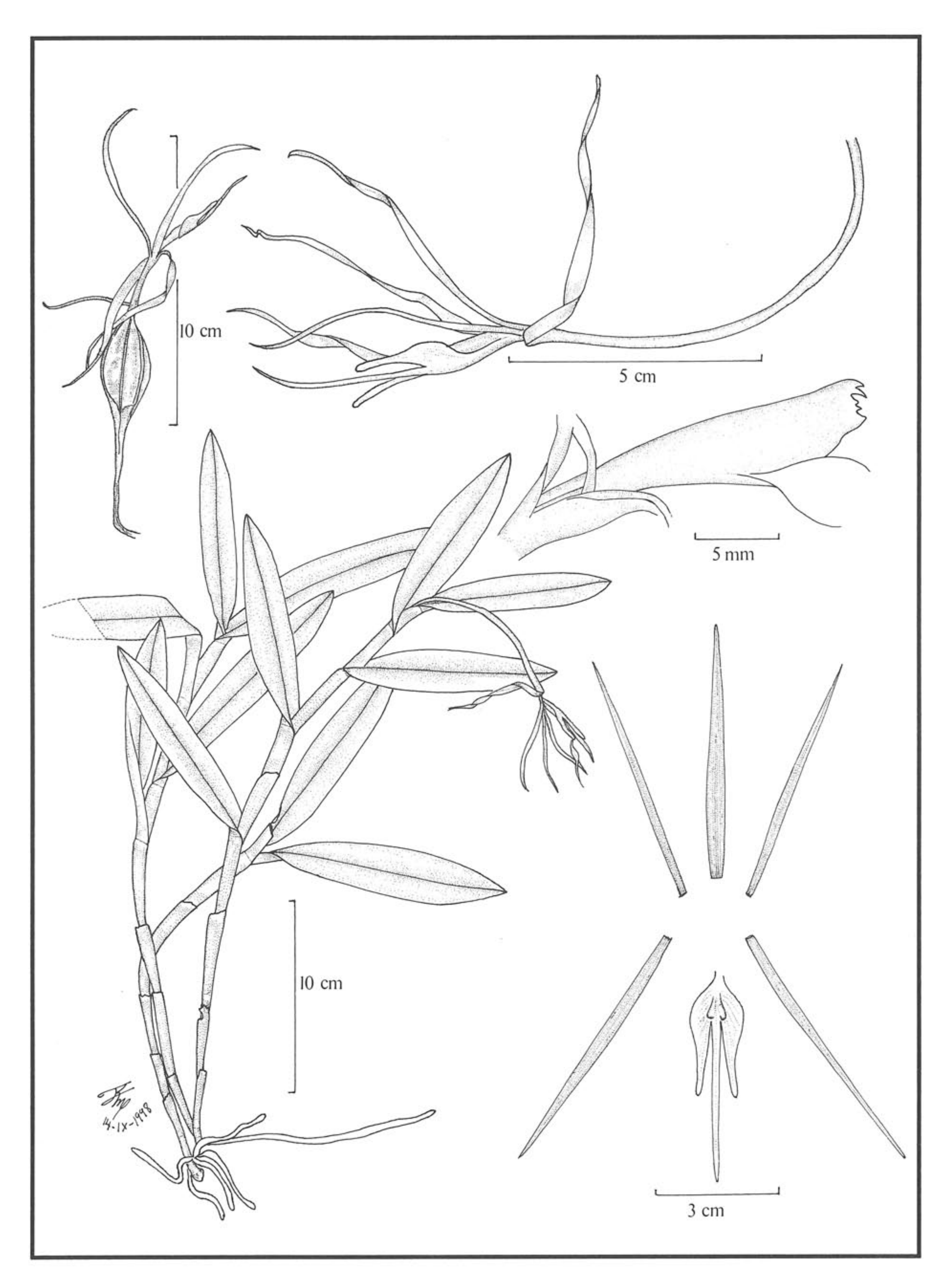
RECOGNITION: *Epidendrum pomecense* is recognized by its thin, delicate stems borne singly from near the top of the previous one, the nodding, 2-3 flowered raceme, flowers pale green, the apex of the column reddish, the ovary thin, petals narrowly oblanceolate, 1-veined, the lateral lobes suborbicular and the trapezoidal midlobe deeply emarginate, mucronate. *Epidendrum karstenii* has still smaller flowers, the sepals 6 mm long, and a cylindrical inflorescence with numerous simultaneous flowers.

CONSERVATION STATUS: DD (data deficient).



ETYMOLOGY: In reference to the type locality, the Río Pómeca that runs from Arcabuco towards the Río Magdalena, along which the plant was collected.

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EPIDENDRUM PORTORICENSE Hágsater & Ackerman

Plate 376

EPIDENDRUM PORTORICENSE Hágsater et Ackerman, *sp. nov.*

Holotype: PUERTO RICO: Luquillo Mts., ***J. Ackerman 2613*** UPRRP! (illustration voucher).

Epidendro nocturno Jacq. Simile sed caulibus lateraliter compressis, ovario longiore, 80-115 mm longo, capsulae corpore suam quinta partem occupanti et versus apicem loco moto.

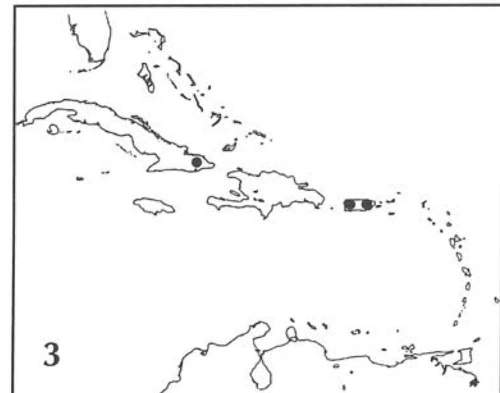
Hierba epífita o litófita, cespitosa, ca. 35-52 cm de alto. **Raíces** basales, carnosas, 2-3.5 mm de grosor. **Tallos** lateralmente comprimidos, anchos, teretes solo en la base, sencillos, rectos, 20-40 x 0.3-1.2 cm; totalmente cubiertos por las vainas. **Hojas** 1-7, distribuidas en la mitad apical del tallo, coriáceas; vaina foliar lateralmente comprimida, 1.1-5.6 x 0.9-1.2 cm; lámina angostamente oblongo-elíptica, 4:1-7:1, obtusa, ligeramente carinada en el dorso, progresivamente más grande, excepto por las dos últimas que son menores, de color verde oscuro, 10-18 x 2-4 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, produciendo nuevos racimos de los entrenudos basales del pedúnculo con el tiempo, floreciendo del mismo tallo durante varios años; raquis desde oculto en la base de la hoja apical hasta 3 cm de largo. **Brácteas florales** mucho más cortas que el ovario, abrazadoras, triangulares, agudas, 7-12 mm de largo. **Flores** una a la vez, sucesivas, resupinadas, tépalos verdes a amarillentos, labelo y columna blancos. **Ovario** terete, no ornamentado, grueso hacia el ápice, 80-115 mm de largo. **Sépalos** entreabiertos, semejantes, linear-lanceolados, acuminados, mucronados, margen revoluto, entero, 57-75 x 3-7 mm; el **dorsal** 10-12-nervados; los **laterales** más angostos, 9-10-nervados. **Pétalos** entreabiertos, lineares, acuminados, margen extendido, entero, 6-7-nervados, 51-73 x 1.5-2(-5) mm. **Labelo** unido a la columna, trilobado, 45-61 x 10-14 mm; bicalloso, callos laminares, prominentes, divergentes; con una carina baja; lóbulos laterales semiovados, alargados, obtusos, margen entero, 25-35 x 4-7 mm; lóbulo medio ensiforme, margen entero, 37-56 x 1.5-2.4 mm. **Columna** recta, delgada en la base, fuertemente dilatada hacia el ápice, 16-22 mm de largo. **Clinandrio** corto, 4-lobado, lóbulos oblicuamente cuadrados, senos profundos y angostos. **Antera** obovoda, ápice truncado, 4-locular. **Polinios** 4, semiobovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar a la de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** pequeños. **Nectario** penetrando el ovario, sin reportar qué tan profundo, no ornamentado. **Cápsula** elipsoidal, 9.7-11 cm de largo, cuerpo ligeramente desplazado hacia el ápice, 36-50 x 13-17 mm, pedicelo 37-45 mm, cuello 18-24 mm.

Lithophytic or epiphytic, caespitose **herb**. **Roots** fleshy, basal. **Stems** laterally compressed above. **Leaves** distributed along the upper half, oblong-elliptic, obtuse, progressively longer except for the last two which are shorter. **Inflorescence** apical, pluriracemose. **Floral bracts** much shorter than the ovary, triangular. **Flowers** successive, one at a time, resupinate, tepals green to yellowish, lip and column white. **Ovary** terete. **Sepals** similar, linear-lanceolate, acuminate. **Petals** linear, acuminate. **Lip** united to the column, 3-lobed; bicallose, callus laminar, prominent, divergent, with a low keel; lateral lobes semiovate, spreading, obtuse; midlobe ensiform. **Column** straight, dilated at the apex. **Clinandrium** somewhat surpassing the apex of the column, 4-lobed, lobes obliquely quadrate, separated by deep sinuses. **Anther** obovate, truncate. **Pollinia** 4, semiobovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** penetrating the ovary. **Capsule** long, with the ellipsoid body displaced towards the apex and occupying about 2/5 of the length.

OTHER SPECIMENS : CUBA: Oriente: Prope villaum Monte Verde dictam, *Wright 1490* AMES (diapositiva AMO!). **PUERTO RICO:** Luquillo Mountains, *Ackerman 2201* UPRRP! Luquillo Mts., *Ackerman 2629* UPRRP! (voucher of illustration, Ackerman, cited below); Sierra de Cayey, *Ackerman 2448 et al.* UPRRP! Luquillo Mts., *Ackerman 2459 et al.* UPRRP! Bo. Mulas, *Meléndez 220b et al.* UPRRP! Luquillo Mts., *Meléndez 222b et al.* UPRRP!

DISTRIBUTION AND ECOLOGY: Puerto Rico and Cuba, on rocks and trees in moist and wet forests at 270-780 m altitude. Flowering in late spring and early summer. Plants usually form fruits, and seed are dispersed in the fall.

RECOGNITION: *Epidendrum portoricense* belongs to the *E. nocturnum* group which has large, successive, star-shaped flowers, the lip usually 3-lobed, on simple stems. The species is recognized by the strongly compressed stems, elongate leaves, usually 5-7 times longer than broad, the ovary 80-115 mm long and the body of the capsule displaced somewhat beyond the middle of the ovary. *Epidendrum nocturnum* has shorter leaves on terete stems, the ovary shorter, 45-62 mm long, and the body of the capsule in the center, occupying most the of the length of the ovary. *Epidendrum latifolium* (Lindl.) Garay & Sweet also has compressed stems, but the leaves are relatively wider, usually 2-3 times longer than broad, the ovary is 112-180 mm long, twice as long as the sepals or longer, and the body of the capsule is clearly beyond the middle of the ovary. *Epidendrum tridens* Poeppig & Endlicher from the Amazon basin has a short, thick ovary 60-100 x 4-5 mm, leaves 4-5 times longer than broad, and the body of the capsule in the middle of the ovary.

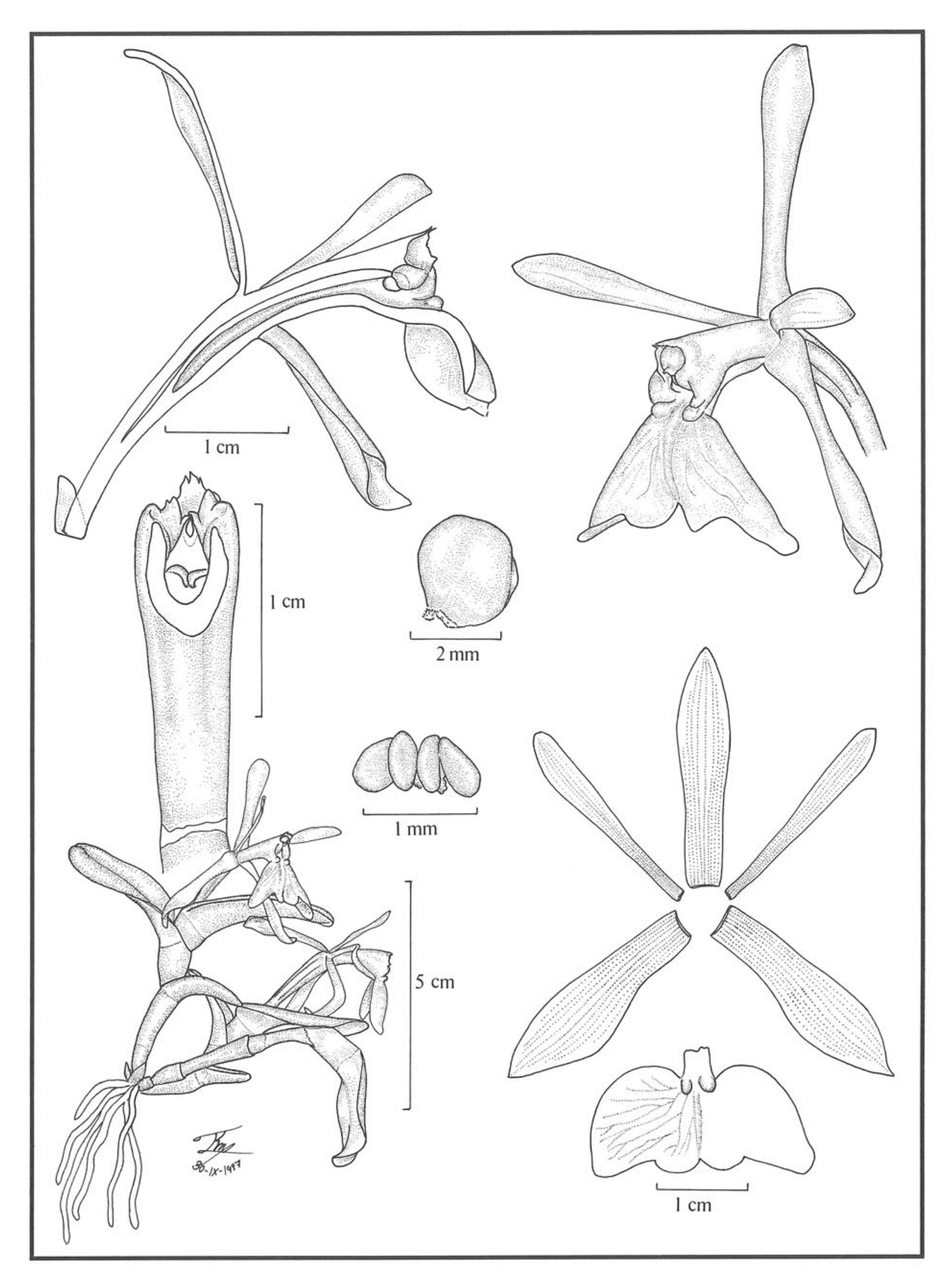


CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In refernce to the country of Puerto Rico, where the species was originally found.

REFERENCES: Ackerman, J. D., 1995, An Orchid Flora of Puerto Rico and the Virgin Islands. **Memoirs N.Y. Bot. Garden 73: 65-67**, as *E. tridens* Poeppig & Endlicher; Cogniaux, 1903, **Symb. Ant. 4: 177**; Cogniaux, 1910, **Symb. Ant. 6: 523**; Reichenbach f., H.G., 1885, **Ber. Deutsch. Bot. Ges. 3: 278**.

Authors: E. Hágsater & J. D. Ackerman **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM PUTUMAYOËNSE Hágsater & L. Sánchez

Plate 377

EPIDENDRUM PUTUMAYOËNSE Hágsater et L. Sánchez, *sp. nov.*

Holotype: COLOMBIA: Putumayo, cultivada en Colomborquídeas y después en México, pressed 30 Sep. 1997, *Colomborquídeas,* ***E. Valencia sub E. Hágsater 11640*** AMO! (illustration voucher).

Epidendro sympetalostele Hágsater & L. Sánchez simile sed habitu minore, sepalis 9-nervatis, petalis liberis, labello carinam centralem prominentem et duas venas laterales leviter incrassatas ferenti, lobulo medio emarginato duos lobulos facienti, columna processis apicalibus destituta.

Hierba epífita, cespitosa, 7-7.5 cm de alto. **Raíces** basales, carnosas, filiformes, 0.5-1.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, flexuosos, 3.5 x 4 cm. **Hojas** 3, equidistantes a lo largo del tallo; vaina lateralmente comprimida, lisa, 0.7-1.5 cm de largo; lámina subcoriácea, ovado-elíptica, desigualmente bilobada, margen entero, extendido, con una carina dorsal evidente, verde-glauco, 2.5-4.5 x 1-2.5 cm. **Espata** ausente. **Inflorescencia** apical en el tallo maduro, sésil, sucesiva; pedúnculo ausente. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 1.5 x 2 mm. **Flores** 1-3, una a la vez, resupinadas, sucesivas, verdes. **Ovario** ligeramente dilatado hacia el perianto, terete, no ornamentado, 20-21 x 2.5-3 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, angostamente oblanceolados, agudos, margen entero, revoluto, 9-nervados, con tres nervaduras secundarias, 24.5-25 x 7-7.3 mm; los **laterales** oblicuos. **Pétalos** libres, angostamente oblanceolados, agudos, margen entero, extendido, 5-nervados, membranáceos, 23-23.5 x 2.5-3 mm. **Labelo** unido a la columna, base ampliamente cordiforme, truncada, trilobado, obtrapezoide, 12-12.5 x 23.5-24 mm; bicalloso, los callos, pequeños, subglobosos; disco rugoso en la base, con una quilla central prominente, la cual se prolonga hasta el ápice, y dos venas laterales ligeramente engrosadas que se prolongan hasta la mitad; lóbulos laterales semiovados, enteros, 7.7-8.1 x 13.5-14 mm; lóbulo medio muy pequeño, ancho, ampliamente emarginado, formando dos lóbulos semiorbiculares, 1.8-2 x 7.5-8 mm. **Columna** recta, 16.5-17 x 2.5-3 mm, sin procesos apicales laterales. **Clinandrio** prominente, irregularmente dentado. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas más cortas que los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/2 del largo de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose **herb**. **Stems** simple, reed-like, laterally compressed, flexuose. **Leaves** 3, ovate-elliptic, apex bilobed, unequal, greenish glaucous. **Inflorescence** apical, sessile. **Floral bracts** shorter than the ovary, triangular, acute. **Flowers** 1-3, one at a time, resupinate, succesive, green. **Ovary** terete. **Sepals** glabrous, free, narrowly oblanceolate, acute, margin revolute, 9-veined; the **laterals** oblique. **Petals** free, narrowly oblanceolate, acute, membranaceous, 5-veined. **Lip** adnate to the column, widely cordiform-truncate, 3-lobed, obtrapezoid; bivallose, the callus subglobose; disc with a prominent central keel, and two lateral veins; lateral lobes semiovate, entire; midlobe much smaller than the laterals, emarginate, forming two semiorbicular lobes. **Column** straight, without apical appendages. **Clinandrium** prominent, dentate. **Anther** subspheroid, 4-celled. **Rostellum** apical, slit. **Nectary** penetrating 1/2 of the ovary, unornamented.

OTHER SPECIMENS: COLOMBIA: Without locality, *Escobar 5337* AMO! (probably the same plant as the type) **Caquetá:** Florencia, "El Paraiso", *Valdivieso 462* HPUJ!

OTHER RECORDS: COLOMBIA: Photograph in Native Orchids of Colombia by R. Escobar (No. 895, pg. 769), *Escobar 5337* AMO (flowers in spirit)! **Caquetá:** Florencia, "El Paraiso", *Valdivieso 462* AMO (xerox illustration)!

DISTRIBUTION AND ECOLOGY: Known only from southern Colombia from the Amazon slope of the Andes. Epiphyte, ca. 800 m altitude. Flowering from June to September.

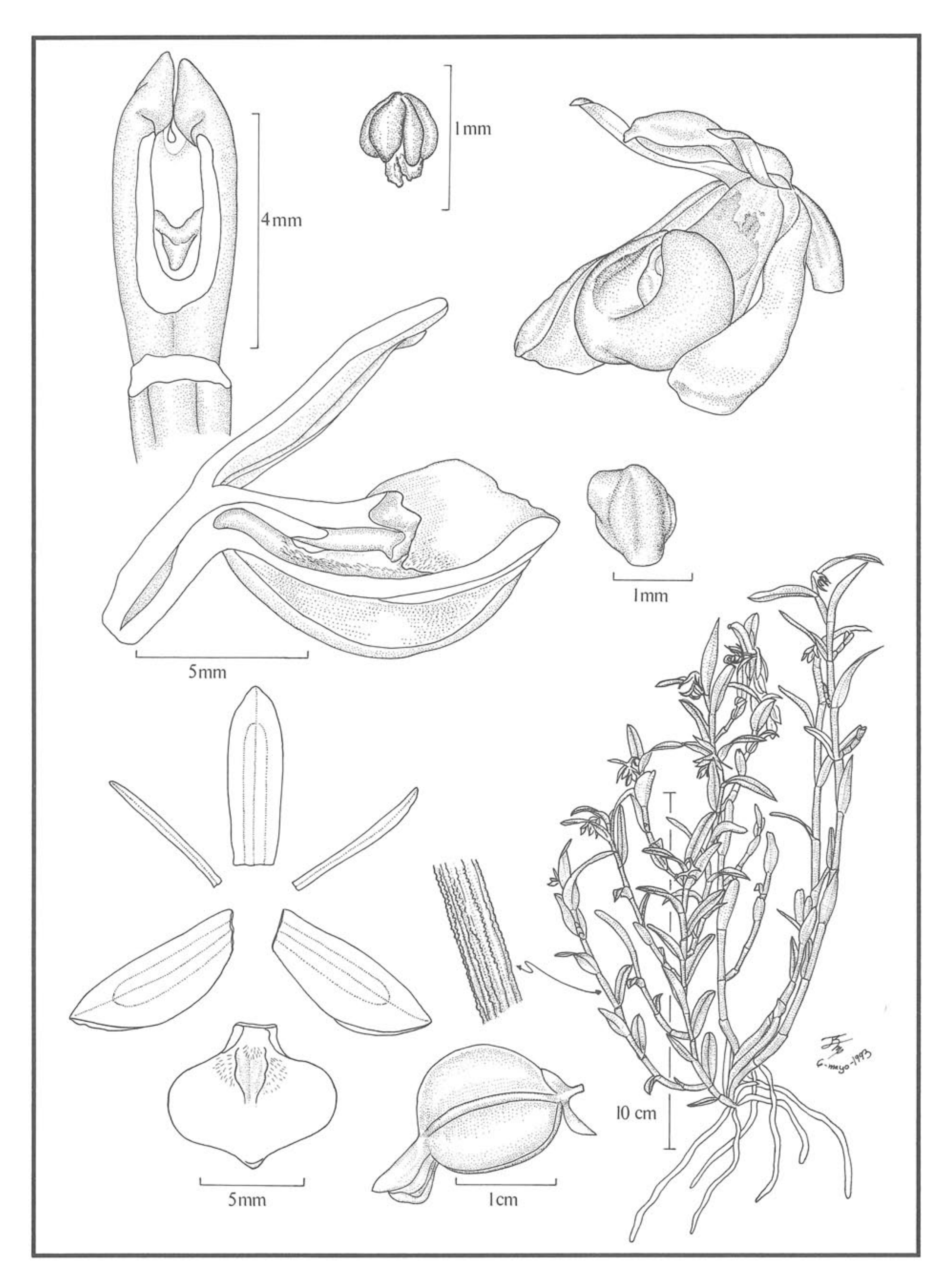


RECOGNITION: *Epidendrum putumayoënse* is recognized by its small plants, 7.5 cm tall, laterally compressed stems, 3 green glaucous, unequal leaves, sepals and petals narrowly oblanceolate, the sepals 9-veined, free petals, lip with semiovate, entire lateral lobes, a much smaller, emarginate midlobe and the unornamented column. It is similar to *E. sympetalostele* from the Magdalena River Valley, which has larger plants, 17 cm tall, 5-veined sepals, suberect petals adnate to the column so that they appear to arise from the middle of it, lip with three prominent central keels on the disc and several thickened lateral veins, suborbicular-subquadrate lateral lobes with a conspicous notch near the base, and prominent bifid lobes at the sides of the column apex, and the very prominent clinandrium. *Epidendrum althausenii* A. D. Hawkes, widespread in the Amazon Basin, has simultaneous flowers, linear petals and a larger, subquadrate lip, 17-22 x 25-32 mm.

CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: The name *putumayoënse* refers to the Departament of Putumayo in Colombia, where the species was found.

Authors: E. Hágsater & L. Sánchez Saldaña **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM RHODANTHUM Hágsater & Dodson

Plate 378

EPIDENDRUM RHODANTHUM Hágsater et Dodson, *sp, nov.*

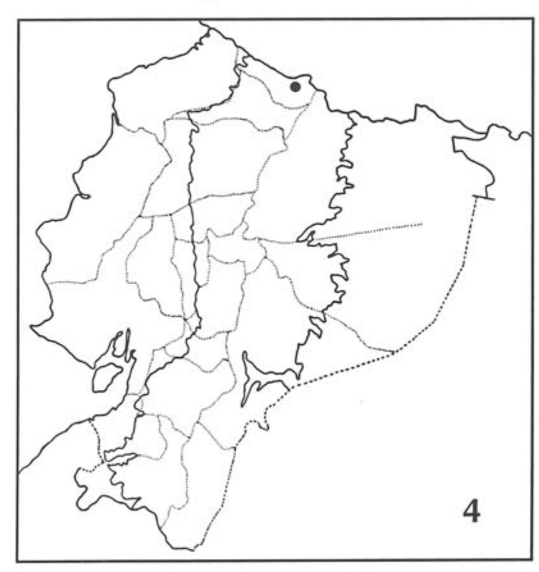
Holotype: ECUADOR: Carchi: km 39 Tulcán-Maldonado, pasando el puerto, en páramo de alta montaña con *Espeletia*, 00°47'39"N 77°56'55"W, 3640 m, 6 May 1993, ***E. Hágsater 11252 et al.*** AMO! (in spirit, illustration voucher).

Epidendro rhombochilo L. O. Williams simile sed floribus majoribus albis roseo suffusis, labello latiore quam longiore.

Hierba terrestre, cespitosa, 7-27 cm de alto. **Raíces** de los entrenudos basales, carnosas, 1-3 mm de grosor. **Tallos** teretes, ramificados a todo lo largo en tallos maduros, los principales 7-25 x 0.2-0.23 cm, las ramificaciones más cortas, 3-6 x 0.15-0.18 cm. **Hojas** distribuidas a todo lo largo de los tallos, subcoriáceas; vaina tubular, estriada y verrugosa, amoratada, ca. 2 cm de largo; lámina angostamente oblonga, ápice desigualmente bilobado, margen irregularmente eroso-denticulado, verde oscuro, 12-31 x 3.5-6 mm, las de las ramificaciones progresivamente más grandes, pero aparentemente hasta tan grandes como las de los principales. **Espata** ausente. **Inflorescencia** apical, de los tallos principales y de las ramificaciones, florece una sola vez, racemosa a paniculada, nutante, en ocasiones con una ramificación antes de la primera flor; pedúnculo corto, terete; raquis verrugoso. **Brácteas florales** más largas que el ovario, triangulares a lanceoladas, oblongas, agudas a largamente acuminadas, dorsalmente verrugosas, ca. 7 mm de largo. **Flores** 4-8 sucesivas, abriendo una a la vez, con los botones en diversos estados de desarrollo, blancas teñidas de rosa viejo, la columna blanca con manchas rosadas en los 2/3 apicales. **Ovario** corto, grueso, no inflado, 5 mm de largo. **Sépalos** entreabiertos, carnosos, obtusos, cóncavos, mucronados, 3-nervados, 8.5 x 2.6 mm; el **dorsal** angostamente elíptico-ligulado; los **laterales** angostamente elípticos, oblicuos, 3.5 mm de ancho. **Pétalos** entreabiertos, subparalelos al sépalo dorsal, lineares, 1-nervados, 7.5-8 x 0.6 mm. **Labelo** unido a la columna, entero, transversalmente elíptico al extenderse, obtuso, apiculado, carnoso, dorsalmente acanalado, pubescente alrededor y en la base del callo, abrazando la columna en posición natural, 5.5 x 8 mm; bicalloso, callos laminares, las láminas largas y aplanadas, divergentes en la base, convergentes hacia el ápice; sin quillas. **Columna** doblada en la base con respecto del ovario, arqueada hacia arriba, terminada en dos dientes romos, 6 mm de largo. **Clinandrio** corto, entero. **Antera** ovoide, 4 locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas granulosas, ligeramente más largas que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** cerca de 1/3 del largo de la cavidad estigmática. **Nectario** sin traspasar el perianto, pubescente frente a la cavidad estigmática, pubescencia más larga hacia el fondo del nectario. **Cápsula** subglobosa, sin cuello ni pedicelo, verde brillante, perianto persistente color verde sucio, 1.5-1.7 x 1.2-1.4 cm.

Terrestrial, caespitose **herb**. **Roots** fleshy, from the basal internodes of the stems. **Stems** terete, mature stems branching nearly throughout. **Leaves** distributed throughout, subcoriaceous; sheath tubular, striated and verrucose, purple-tinged; blade narrowly oblong, unequally bilobed, margin irregular erose-denticulate. **Spathe** absent. **Inflorescence** apical, from the main stems and the branches, racemose to paniculate, nutant, flowers only once. **Floral bracts** triangular to lanceolate, dorsally verrucose, longer than the ovary. **Flowers** 4-8, successive, with the buds in various stages of development, old rose-colored on white. **Ovary** terete, not inflated. **Dorsal sepals** narrowly elliptic-ligulate, obtuse, 3-veined. **Lateral sepals** narrowly elliptic, oblique, obtuse, 3-veined. **Petals** linear, 1-veined. **Lip** united to the column, entire, transversely elliptic, obtuse, apiculate, embracing the column in natural position; bicallose, callus laminar, pubescent at the base. **Column** bent at the base with respect to the ovary, then slightly arching upwards, ending in a pair of rounded teeth. **Clinandrium** short, entire. **Anther** ovoid, 4-celled. **Pollinia** 4, obovoid; caudicles soft and granular, slightly longer than the pollinia; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** not surpassing the perianth, pubescent in front of the stigmatic cavity, the pubescence longer towards the ovary. **Capsule** subglobose, without neck or pedicel, perianth persistent.

DISTRIBUTION AND ECOLOGY: Known only from the type, growing on roadside banks at 3600 m altitude with *E. rhombochilum* and *Brachionidium sp.* on the western Andes in páramo with *Espeletia*. Flowering April-May.

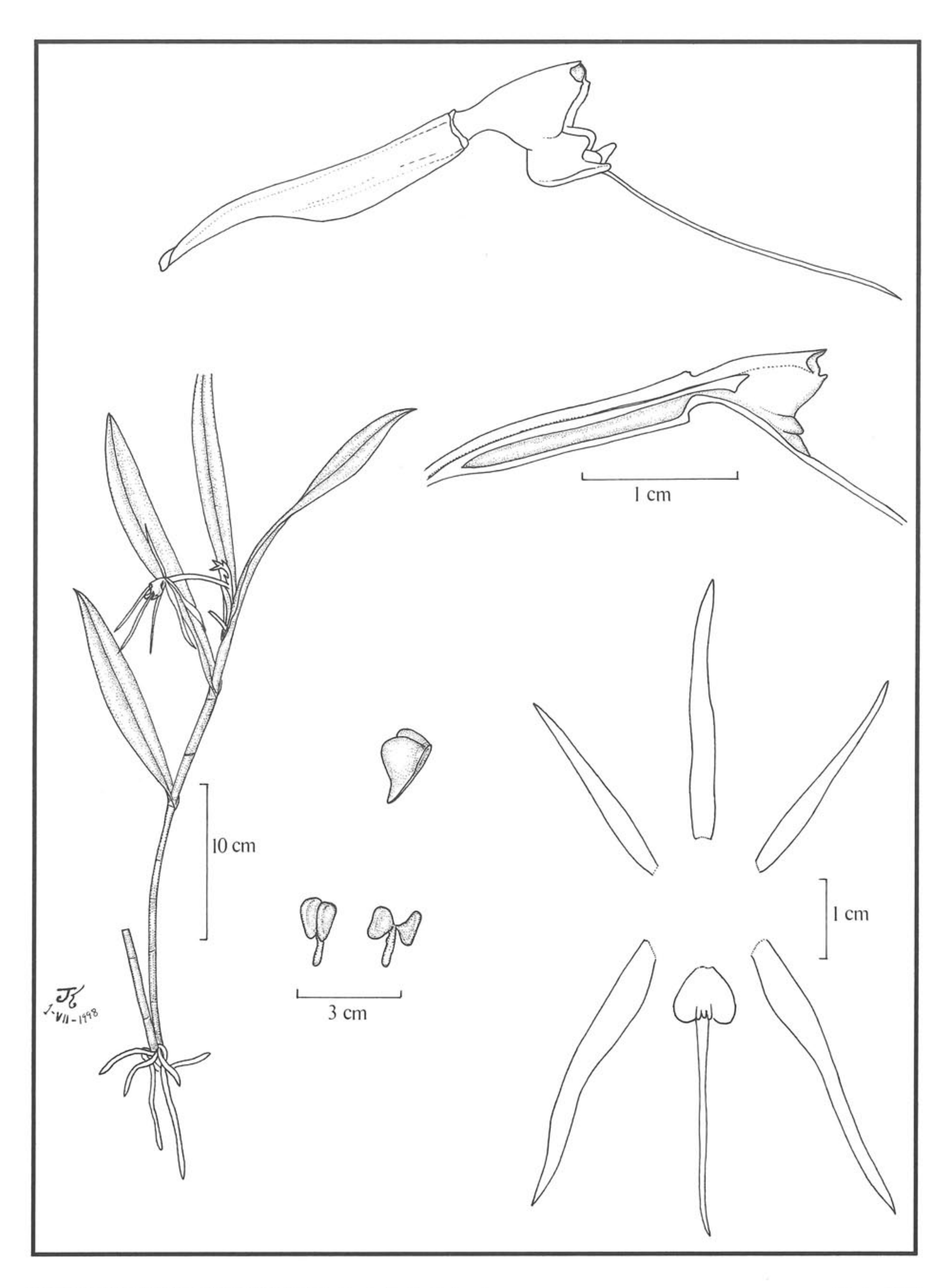


RECOGNITION: *Epidendrum rhodanthum* is recognized by its small, branching, caespitose plants with small, fleshy, white and old rose-colored flowers produced in succession, the transversely elliptic lip enveloping the column, sepals 8.5 mm long. *Epidendrum rhombochilum* which is sympatric and the more common species, has bronzy yellow-green successive flowers, the sepals 4.5 mm long, and the lip about as long as it is wide.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: From the Greek "*rhodos*" rosy or pale pure red, and "*anthos*" flower.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ROCALDERIANUM P. Ortiz & Hágsater

Plate 379

EPIDENDRUM ROCALDERIANUM P. Ortiz et Hágsater, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca; Buenaventura, Bajo Calima, ca. 50 m, 15 Mar. 1997, ***P. Ortiz 1097*** HPUJ! (illustration voucher).

Epidendro nocturno Jacq. simile sed lobulis lateralibus labelli valde parvis, longitudine 1/3 ad 1/5 labelli partes aequantibus, rotundatis, nectario inflato vesicam ventralem facienti qui in dimidio apicali ovarii penetrat.

Hierba epífita, cespitosa, ca. 30-40 cm de alto. **Tallos** erectos, lateralmente comprimidos, dilatados hacia el ápice, flexuosos, color morado. **Hojas** 5, distribuidas en la mitad apical del tallo; vaina tubular, lateralmente comprimida; lámina elíptica, aguda, verde en el haz, morada en el envés, 10-19.5 x 2.5-3.5 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, florece durante varios años; pedúnculo y raquis claramente sobresaliendo entre las hojas, ca. 3 cm de largo. **Brácteas florales** mucho más cortas que el ovario. **Flores** una a la vez, sucesivas, sépalos verde-crema, pétalos verde-amarillo, labelo blanco, ápice del lóbulo medio amarillento, callos amarillos, columna blanca, fragancia no registrada. **Ovario** inflado hacia la mitad apical ventral, 2.5-4 cm de largo. **Sépalos** extendidos, angostamente lanceolados, acuminados, margen entero, 35-50 x 4-5 mm; los **laterales** ligeramente oblicuos. **Pétalos** extendidos, angostamente lanceolados, acuminados, margen entero, 34-48 x 3-4 mm. **Labelo** unido a la columna, trilobado, 33-36 x 9-14 mm; bicalloso, los callos gruesamente laminares; lóbulos laterales semiobovoides a semiorbiculares, 4-6 x 6-8 mm; lóbulo medio acicular, 18-30 x 1.5-2 mm. **Columna** recta, fuertemente dilatada en los dos tercios apicales, 11-13 mm de largo. **Clinandrio** trilobado, con senos amplios, los márgenes laterales lisos a aserrados. **Antera** bigibosa. **Polinios** 4, ovoides, lateralmente comprimidos; caudículas del doble del largo de los polinios. **Nectario** penetrando 2/3 del ovario y claramente inflado, formando una vesícula ventral en la mitad apical.

Caespitose epiphytic **herb. Stems** erect, laterally compressed, dilated towards the apex, flexuous. **Leaves** 5, distributed towards the apical half of the stem; sheath tubular, laterally compressed; blade elliptic, acute, green above, purple below. **Inflorescence** apical, pluriracemose, flowering during several years; rachis clearly visible between the apical leaves. **Flowers** one at a time, successive, sepals creamy-green, petals yellowish-green, lip white, the midlobe yellowish, callus yellow, column white. **Ovary** inflated ventrally towards the apical half. **Sepals** narrowly lanceolate, acuminate. **Petals** narrowly lanceolate, acuminate. **Lip** 3-lobed; lateral lobes subobovoid to suborbicular; midlobe acicular. **Column** straight, strongly dilated above the basal third. **Clinandrium** 3-lobed with wide sinuses, lateral margins entire or serrate. **Nectary** penetrating 2/3 of the ovary and clearly inflated ventrally along the apical half.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Buenaventura, Bajo Calima, *Rozo 14 & Calderón* TOLI!

OTHER RECORDS: COLOMBIA: Without locality, *Lehmann tab. 1548* K (illustration)! **Chocó:** Bahía Solano, *Misas 47* AMO (illustration, xerox)! **Valle del Cauca:** Bajo Calima, *Ortiz 1097* AMO! HPUJ! (slide of live flower)

RECOGNITION: *Epidendrum rocalderianum,* a member of the *E. nocturnum* group, is recognized by the short, widely rounded, lateral lobes of the lip, about 1/3-1/5 its length, the 2.5-4 cm long ovary which is clearly thickened ventrally throughout its apical half due to the swollen nectary, and the 10-19 x 2.5-3.5 cm long, acute leaves, the sepals are creamy-green. It is closely related to *Epidendrum buenaventurae* Kraenzl. which has the lateral lobes of the lip elongate, semiovate, acute, about 2/3 the length of the lip, and narrower leaves, 7-15 x 1-1.2 cm, the ovary terete, not inflated. *Epidendrum tridens* Poep. & Endl. found on the Amazon side of the Andes, also has a thickened ovary 6-10 cm long, leaves 8.5-16 x 1.9-6 cm, and the lateral lobes of the lip elongate, about 2/3 the length of the lip.

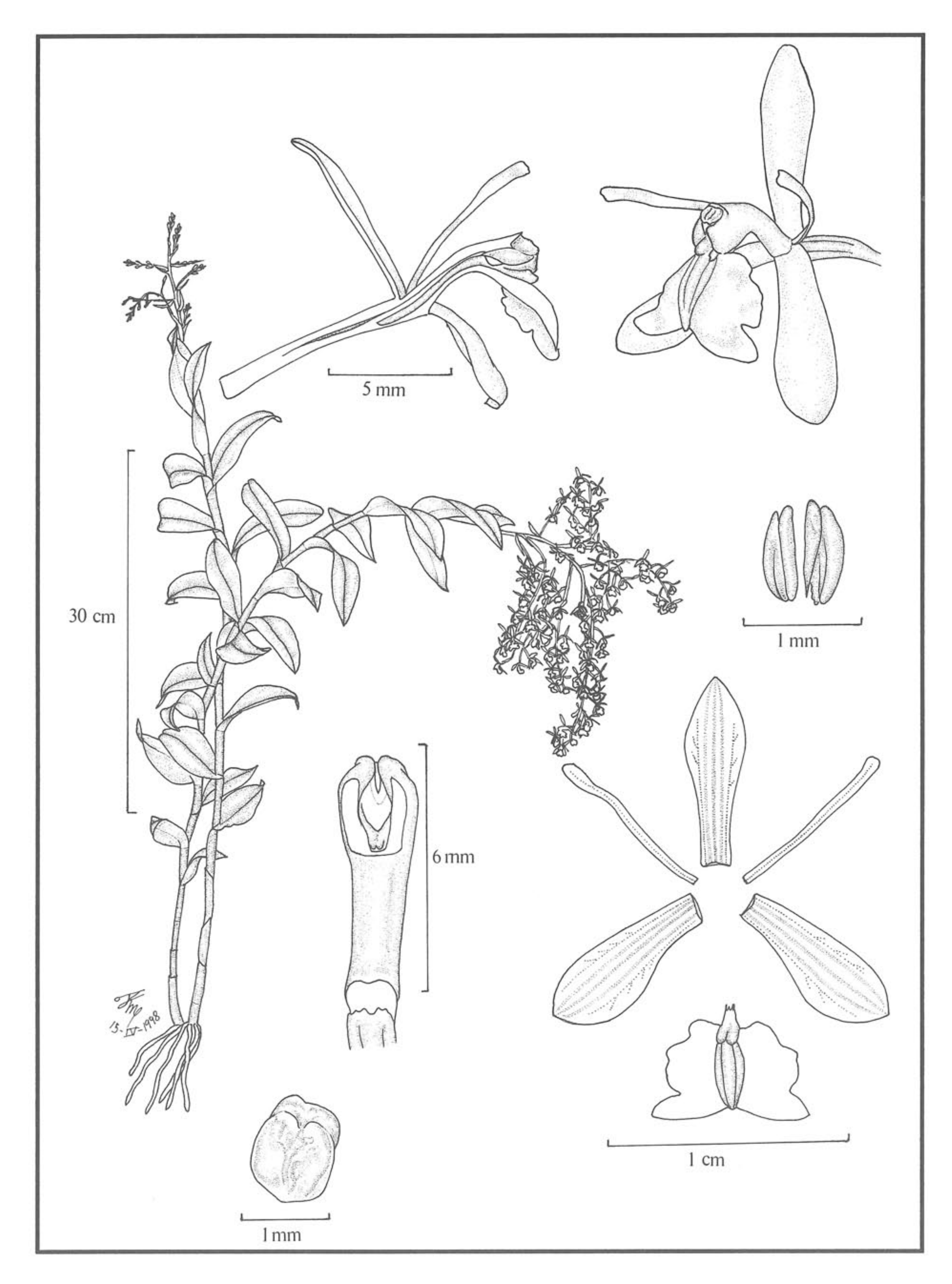


DISTRIBUTION AND ECOLOGY: Known only from the Pacific slope of the Andes in Colombia, at around 50 m altitude. Flowering in March, probably throughout the year.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Eduar Rozo and Hernesto Calderón, who collected the species while students at the Universidad del Tolima.

Authors: P. Ortiz & E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM SHIGENOBUI Hágsater

Plate 380

EPIDENDRUM SHIGENOBUI Hágsater, *sp. nov.*

Holotype: COLOMBIA: Hort. Risaralda, Pereira, Orquídeas Eva, cult. in Mexico, 15 Apr. 1998, ***S. Tsubota sub E. Hágsater 11637*** COL! Isotype: AMO! Clonotype: 6 May 1998 QCNE!

Epidendro agoyanensi Hágsater & Dodson simile sed ovario breviore, columna arcuata, floribus minoribus, segmentis relative latioribus, labello pallide viridi.

Hierba epífita, cespitosa, 43-75 cm de alto. **Raíces** basales, delgadas, 1-3 mm de grosor. **Tallos** erectos, sencillos, tipo caña, teretes, 34-65 x 0.4-0.8 cm. **Hojas** 16-20, distribuidas a lo largo del tallo, subcoriáceas, verdes; vaina tubular, lisa, 1-4 cm de largo; lámina elíptica, aguda, 6-11 x 1.5-3.2 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, paniculada, con 3-13 ramas, densa, erecta, 15-27 cm de largo, ramas de 4-11 cm de largo; pedúnculo corto de 2-4 cm de largo, con 2 brácteas conduplicadas, algo imbricadas, lanceoladas, acuminadas, 12-40 x 3-7 mm. **Brácteas florales** más cortas que el ovario, progresivamente más cortas hacia el ápice de las ramas, angostamente triangulares, acuminadas, 2-8 x 1-2 mm. **Flores** 40-200, simultáneas, ca. 1.7 cm de diámetro, sépalos y pétalos verde amarillentos, labelo verde pálido, inmaculado, columna verde en la base, blanca en el ápice, sin fragancia. **Ovario** terete, no inflado, no ornamentado, 9-14 x 1 mm. **Sépalos** extendidos, cóncavos, obovados espatulados, carnosos, glabros, 5-nervados; el **dorsal** agudo, 7.5-8.5 x 2.5-3 mm; los **laterales** oblicuos, obtusos, 7.2-9 x 3-3-5 mm. **Pétalos** lineares, ligeramente dilatados hacia el ápice, redondeados, 1-nervados, 7.5 x 0.5 mm. **Labelo** unido a la columna, 3-lobado, carnoso, 4 x 5.5-6.5 mm; bicalloso, callos pequeños; disco con tres quillas, la central llegando hasta el ápice del labelo; lóbulos laterales semiovados, margen sinuoso, 1.5 x 3 mm; lóbulo medio bilobado, los lóbulos divaricados, ovado-elípticos, obtusos, separados de los laterales por senos poco profundos. **Columna** delgada, arqueada a la mitad, 5.5-6.5 mm de largo. **Clinandrio** reducido, entero. **Antera** elipsoide, carnosa, 4-locular, con una quilla roma al frente. **Polinios** 4, lateralmente comprimidos, el par interior ligeramente más pequeño, tipo ala de pájaro; caudículas suaves y granulosas, más cortas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/4 de la cavidad estigmática. **Nectario** penetrando 1/5 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose, epiphytic **herb. Roots** basal, thin. **Stems** erect, cane-like, terete. **Leaves** numerous, distributed throughout the stem, green; sheaths tubular, smooth; blade elliptic, acute. **Floral bracts** narrowly triangular, acuminate, shorter than the ovary, progressively shorter towards the apex of the inflorescence. **Flowers** numerous, simultaneous, sepals and petals yellowish-green, column green at base, white towards the apex, lip pale green, unmarked. **Ovary** not inflated, unornamented. **Sepals** spreading, concave, obovate-spathulate, acute to obtuse, fleshy, 5-veined. **Petals** linear, rounded, 1-veined. **Lip** 3-lobed, fleshy; bicallose; disc with 3 keels, the middle keel reaching the apical sinus; lateral lobes semiovate, margin sinuous; midlobe bilobate, the lobes ovate-elliptic, obtuse, divaricate. **Column** thin, arched in the middle. **Clinandrium** reduced, entire. **Anther** ellipsoid, 4-celled. **Pollinia** 4, laterally compressed, the inner pair somewhat smaller, bird-wing type; caudicles soft and granulose, shorter than the pollinia; viscidium semiliquid. **Rostellum** subapical, slit. **Lateral lobes of the stigma** 1/4 the length of the cavity. **Nectary** penetrating 1/5th of the ovary, unornamented.

DISTRIBUTION AND ECOLOGY: Known only from a cultivated plant from Colombia, provenance unknown. Flowering in Mexico in April-May.

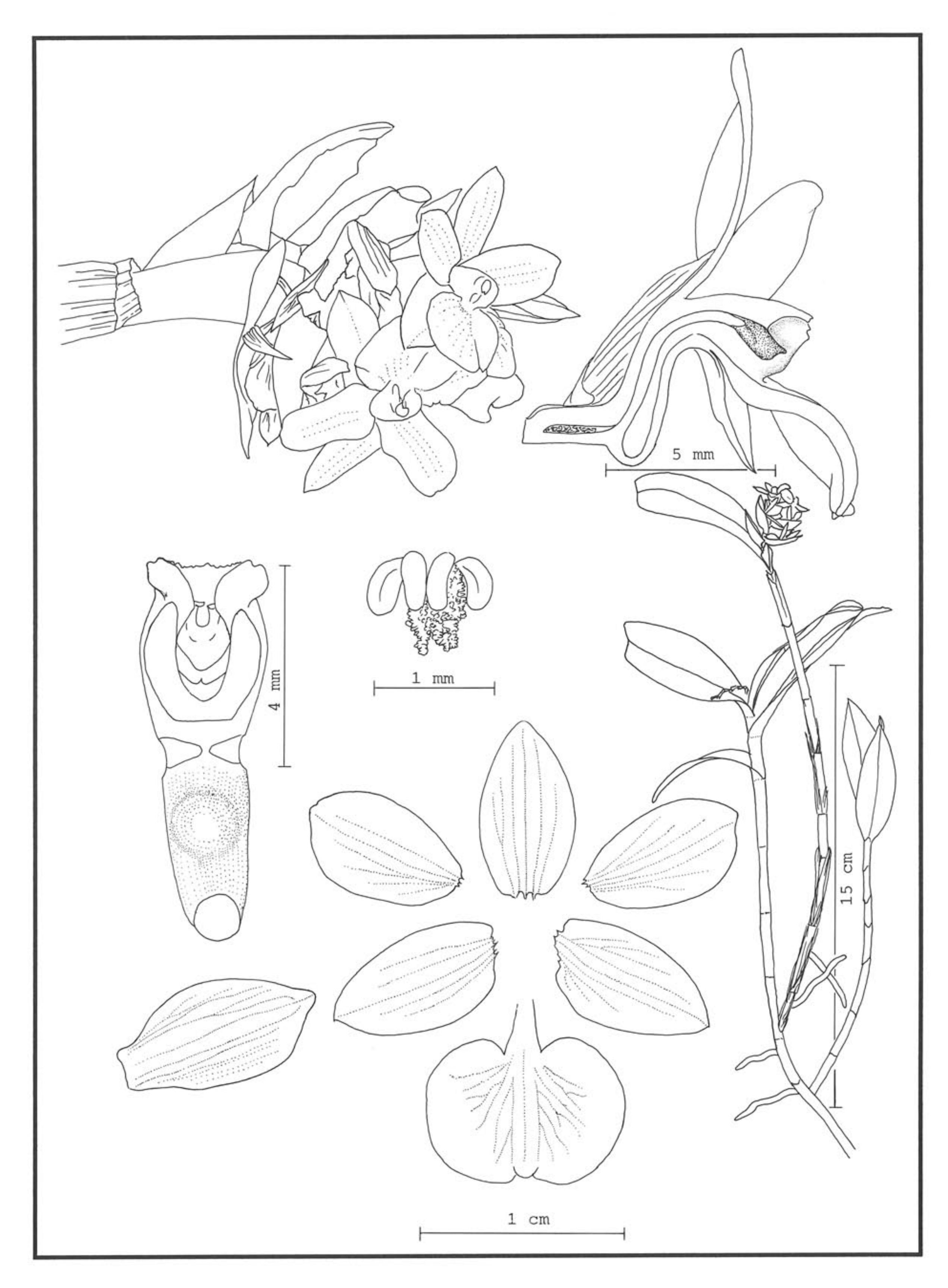
RECOGNITION: *Epidendrum shigenobui* belongs to the *Epidendrum paniculatum* Ruiz & Pavón group and is similar to *E. agoyanense*, from the eastern Andes of Ecuador, and is distinguished by the somewhat smaller flowers, the pale green lip which is slightly differently shaped and the lighter colored leaves which are fleshier. *Epidendrum agoyanense* has a straight column, longer ovary, and the lateral lobes of the white lip somewhat more square.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Shigenobu Tsubota, of Orquídeas Eva, of Pereira, Risaralda, who cultivated and provided the live material. Mr. Tsubota has had a longstanding interest in orchids, cultivating them commercially. Originally from Japan, he moved to Colombia over 20 years ago, visiting Mexico City on the way.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM SIGMOIDEUM Hágsater

Plate 381

EPIDENDRUM SIGMOIDEUM Hágsater, *sp. nov.*

Holotype: COSTA RICA: Reserva Biológica de Monteverde, sendero brillante, lugar del sapo dorado, bosque enano de *Vibrium sp.*, *Oreopanax sp.*, Melastomatáceas, 1550 m, col. 25 Jan. 1988, pressed 23 Dec. 1988, ***E. Hágsater 9443, O. Rodríguez, G. Bello Carranza & A. Kaessbohrer*** AMO! (illustration voucher).

Epidendro barbae Rchb. f. affine sed ovario sigmoideo, petalis obovatis, labello bilobato.

Hierba epífita, de simpodio rastrero, 16-25 cm de alto. **Raíces** basales, escasas, distribuidas a lo largo de los entrenudos basales, carnosas, gruesas, ca. 2.5 mm de grosor. **Tallos** sencillos, donde cada tallo nuevo se origina del 2º-4º entrenudo intermedio del tallo anterior, tipo caña, teretes en la base, lateralmente comprimidos hacia el ápice, rectos, 9.5-16 x 0.2-0.5 cm; la parte basal, no foliada, cubierta cuando joven por vainas tubulares que se deshacen en fibras al segundo año y dejan el tallo desnudo al tercero. **Hojas** 2-4, distribuidas hacia el ápice del tallo, coriáceas; vaina tubular, lisa, 1.2-2.6 cm de largo; lámina elíptica, obtusa, mucronada, margen entero, lisa, verde, 5.5-7.5 x 1.7-2.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, ca. 2 cm de largo; raquis flexuoso, no ornamentado; brácteas del pedúnculo 1-2 cerca de la base, conduplicadas, semejantes a las florales. **Brácteas florales** ovado-elípticas, conduplicadas, glumáceas, más largas que el ovario, progresivamente más cortas, 10-18 x 4-4.5 mm. **Flores** 6-8, sucesivas, de poca duración, 2-3 frescas y varias marchitas, así como botones en desarrollo a la vez, concoloras, verdes, lustrosas, fragancia débil o ninguna. **Ovario** sigmoide, inflado ventralmente en las 2/3 partes de su largitud, sección en forma de "S" en su parte media, no ornamentado, 7 mm de largo. **Sépalos** extendidos, libres, glabros, membranáceos, ovados, obtusos, margen extendido; el **dorsal** 7-nervado, 8.5 x 4.7 mm; los **laterales** oblicuos, 5-nervados, 9 x 5 mm. **Pétalos** extendidos, obovados, redondeados, margen extendido, membranáceos, 3-nervados, los laterales diversamente ramificados, 8 x 5 mm. **Labelo** unido a la columna, convexo en posición natural, bilobado, carnoso, emarginado, 7 x 9.5 mm; ecalloso; unicarinado, la carina roma; lóbulos suborbiculares, margen entero. **Columna** arqueada, corta, gruesa, formando una "S" con el ovario, 4.5 mm de largo. **Clinandrio** corto, eroso. **Antera** subesférica, plana, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, cóncavos, subiguales; caudículas, ligeramente más largas que los polinios, suaves y granulosas; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** reducidos. **Nectario** penetrando las 2/3 partes del ovario, formando una vesícula prominente formando un espolón incipiente, no ornamentado. **Cápsula** no vista.

Sympodial, repent epiphyte. **Roots** scarce, distributed along the basal nodes, thick, fleshy. **Stems** simple, cane-like, terete at base, laterally compressed toward the apex, produced from a middle internode of the previous stem. **Leaves** aggregated towards the apex of the stem, elliptic, obtuse, mucronate, coriaceous. **Inflorescence** apical, from mature stem, flowers only once, racemose, distichous. **Floral bracts** longer than the ovary, ovate-elliptic, conduplicate, glumaceous. **Flowers** 6-8, successive, short-lived, 2-3 open at one time, concolor, green, lustrous. **Ovary** sigmoid, inflated ventrally. **Sepals** ovate, obtuse, 5-7-veined. **Petals** obovate, rounded, 3-veined, branching above. **Lip** bilobed, emarginate; lobes suborbicular; ecallose; with a central, low, fleshy keel. **Column** arched, thick, sigmoid with the ovary. **Clinandrium** short, erose. **Nectary** penetrating 2/3 of the ovary, forming a prominent elongate vesicle forming a spur.

OTHER SPECIMENS: COSTA RICA: Monteverde, *Dryer 78* CR! F! *Dryer 1379* CR! *Haber ex Bello 5308* MO!

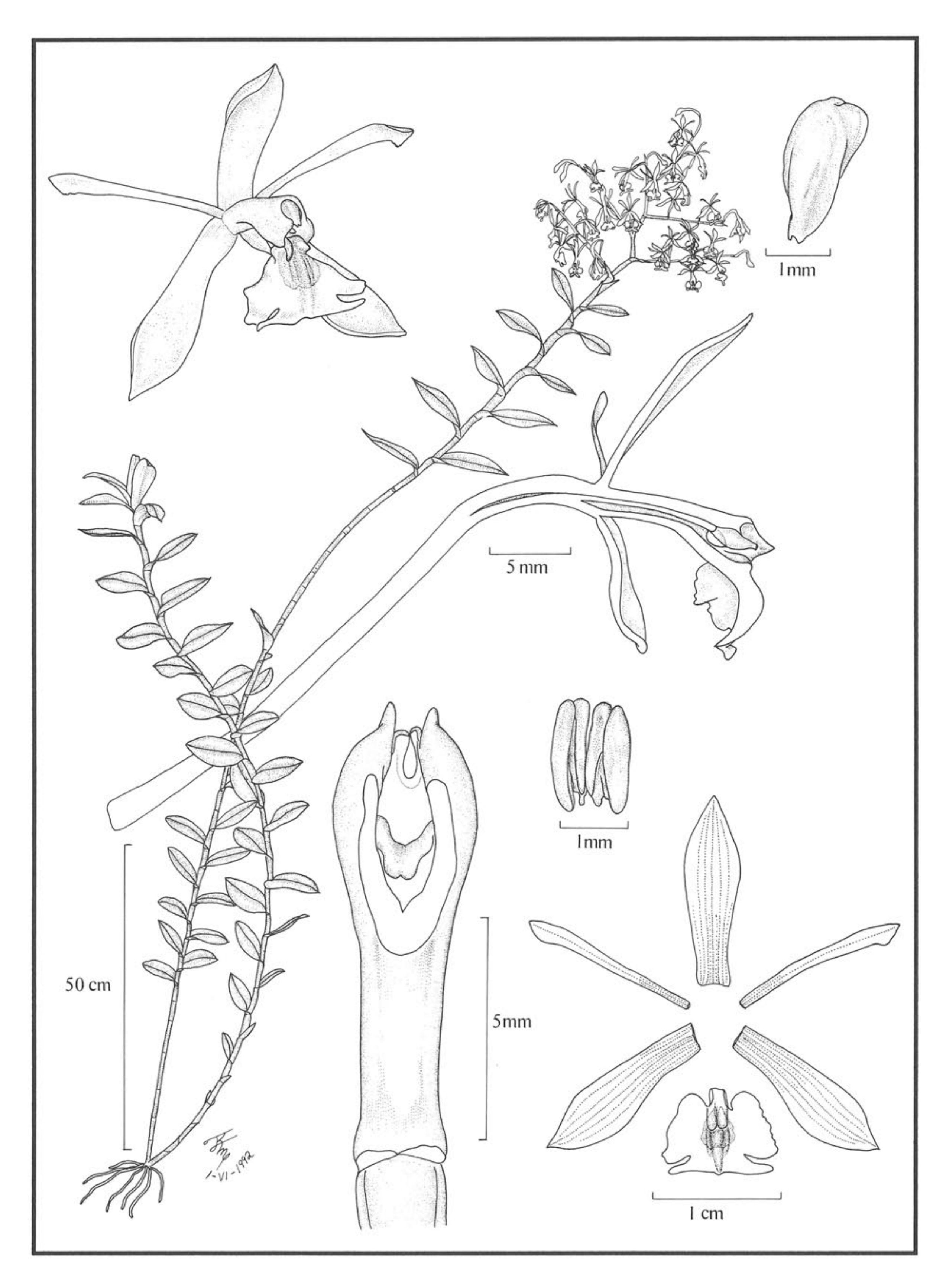
DISTRIBUTION AND ECOLOGY: Known only from the type locality, epiphytic on the ridge of the Cordillera Central in cloud elfin forest of *Vibrium sp.*, *Oreopanax sp.* and Melastomataceae, at 1550 m. The locality is very wet and windy throughout the year. Flowering in April.

RECOGNITION: *Epidendrum sigmoideum* belongs to the *Epidendrum polychlamys* Schltr. group, it is distinguished from other members of the group by the sigmoid ovary-column, the elongate spur formed by the nectary on the underside of the ovary, the green flowers and the bilobed lip. *Epidendrum barbae* also has a spur, but the lip is apically 3-lobed, the ovary-column is straight, the flowers are yellow and the petals narrower. *Epidendrum vulcanicola* A. H. Heller has a straight ovary-column and a cordiform, acute lip. In *E. bugabense* Hágsater the ovary-column is straight, the lip obovate, apiculate. In *E. cryptanthum* L. O. Williams the flowers are nearly hidden by the bracts, all forming a compact cone and the lip envelops the column. The flowers of *E. polychlamys* are much larger and the lip is suborbicular-elliptic, without the nectary forming any prominent vesicle.

CONSERVATION STATUS: DD (data deficient). The species has only been recorded from the Monteverde Reserve where it is expected to be conserved.

ETYMOLOGY: From the Greek letter *"sigma"* in the shape of the letter S, in reference to the position of the ovary and column, which distinguishes this species.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM SILVAE Hágsater & V. P. Castro

Plate 382

EPIDENDRUM SILVAE Hágsater & V. P. Castro, *sp. nov.*

Holotype: BRAZIL: Bahía: ca. 35 km de Una, 50 m, hort. Sao Paulo & Mexico City, 6 June 1992, ***V. P. Castro Neto sub E. Hágsater 10299*** AMO! (illustration voucher). Clonotype: 15 Jan. 1993 HB!

Epidendro successivo Hágsater & Miranda simile sed inflorescentia paniculata, floribus simultaneis.

Hierba epífita, cespitosa, 70-220 cm de alto. **Raíces** basales, carnosas, 2-3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, rectos, 50-190 x 0.6-1 cm. **Hojas** numerosas, distribuidas a todo lo largo del tallo; vaina tubular, lisa, amoratada, hasta 5 cm de largo; lámina elíptica, aguda a obtusa, margen entero, lisa, subcoriácea, verde oscuro, algo amoratada cuando joven, 7-14 x 3.2-4.8 cm. **Espata** ausente. **Inflorescencia** apical, paniculada, del crecimiento maduro, florece una sola vez, erecta; brácteas del pedúnculo 1-2, semejantes a las florales pero más cortas. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, 2-8 mm de largo. **Flores** ca. 20-40, simultáneas, resupinadas, sépalos, pétalos y mitad basal de la columna verde manzana, mitad apical de la columna blanca, antera morada, labelo verde pálido con el disco morado oscuro sólido y brillante, fragancia ausente. **Ovario** no inflado, terete, no ornamentado, 35 mm de largo. **Sépalos** extendidos, libres, sin quilla dorsal, carnosos, angostamente espatulado-oblanceolados, agudos, margen extendido, 5-nervados, ocasionalmente con 2 nervaduras secundarias, 14-15 x 4-4.5 mm. **Pétalos** extendidos, rectos, lineares, dilatados hacia el ápice, obtusos, margen extendido, membranáceos, 1-nervados, 15 x 1.5 mm. **Labelo** unido a la columna, cordado en la base, 3-lobado, 6 x 9 mm (entre lóbulos laterales, 8 mm entre los apicales); bicalloso, carinas tres centrales prominentes, romas, la central llegando hasta el seno apical; lóbulos laterales dolabriformes, margen irregular, eroso; lóbulo medio bilobado, lóbulos fuertemente divaricados, horizontales, angostos, oblongos, redondeados. **Columna** recta, delgada, terminada en un par de dientes apicales laterales agudos, 11 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, tipo ala de pájaro, lateralmente fuertemente comprimidos, los interiores algo menores, transparentes; caudículas suaves y lisas, ligeramente más cortas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cortos, de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando solo hasta la base del perianto, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Roots** fleshy. **Stems** simple, cane-like, terete. **Leaves** elliptic, acute to obtuse, deep green, sometimes marked with purple, subcoriaceous. **Inflorescence** apical, paniculate, from mature growth, flowering only once; peduncle short, partly covered by 1-2 large bracts. **Floral bracts** much shorter than the ovary. **Flowers** 20-40, simultaneous, resupinate, sepals, petals and base of column apple-green, apex of the column white, anther purple, lip pale green with the disc solid dark bright purple, unscented. **Ovary** thin, long, unornamented, not swollen. **Sepals** spreading, free, fleshy, narrowly spathulate-oblanceolate, acute, 5-veined, occasionally with 2 secondary veins. **Petals** spreading, membranaceous, linear, dilated towards the apex, 1-veined. **Lip** united to column, 3-lobed; bicallose, 3-carinate; lateral lobes dolabriform, margin irregularly erose; midlobe bilobed, lobes divaricate, horizontal. **Column** straight, slender, with a pair of acute teeth on the sides at the apex. **Clinandrium** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, bird-wing type, strongly compressed, the internal ones slightly smaller; caudicles soft and smooth; viscidium semiliquid. **Rostellum** slit. **Lateral lobes of stigmatic cavity** small. **Nectary** not penetrating beyond the perianth, unornamented.

OTHER RECORDS: BRAZIL: Bahía; Una littoral, *Campacci 451* AMO (xerox of unfinished illustration by V. P. Castro)!

DISTRIBUTION AND ECOLOGY: Known only from the type locality, some 10 km from the sea. Epiphytic on trees and shrubs, in warm and humid places, from 0 to 100 m altitude, growing together with *Cattleya kerrii* F. G. Brieger & H. Bicalho and *Cattleya schofeldiana* Rchb. f. Flowering June-July, (December-January in cultivation in Mexico).

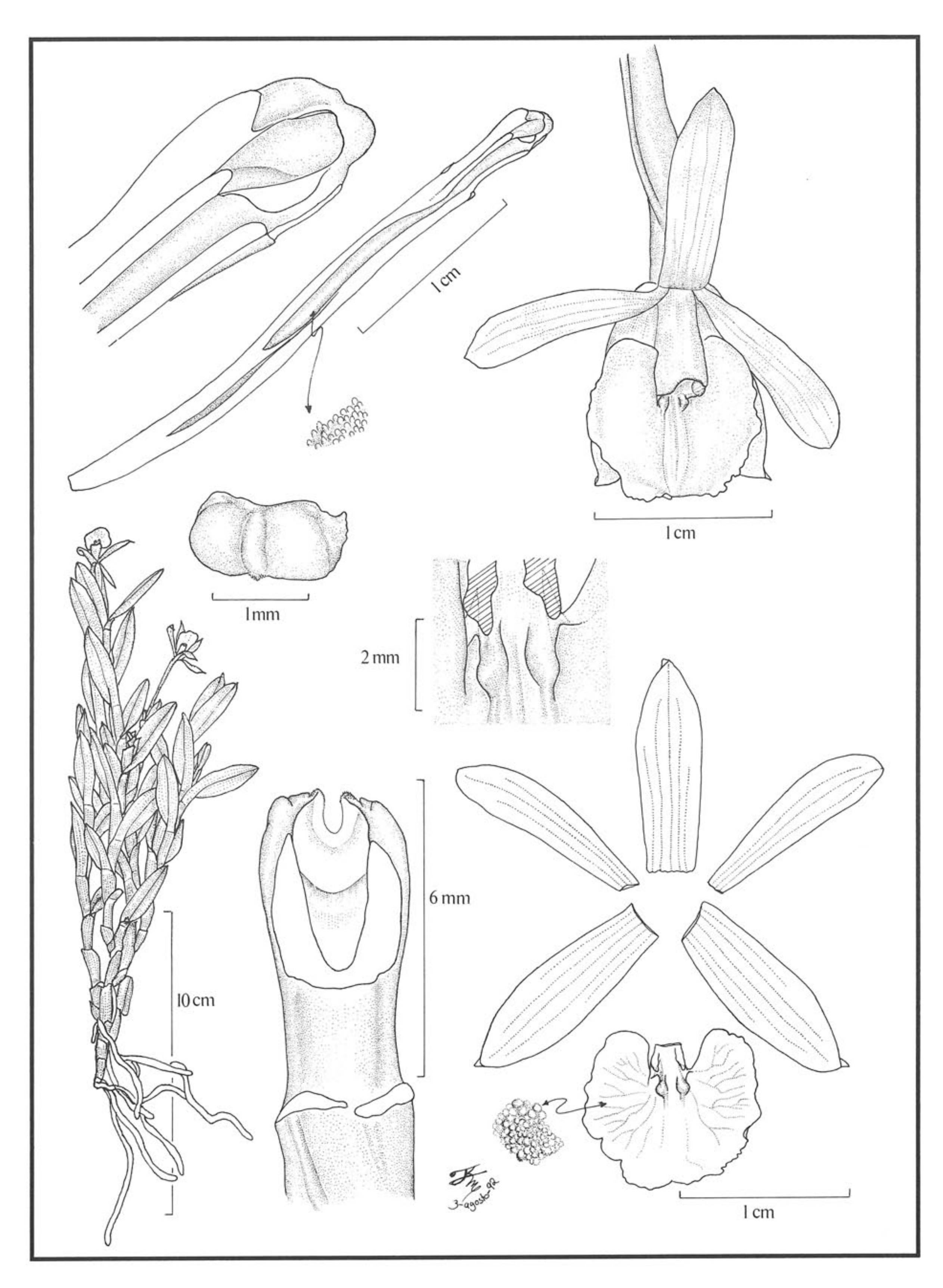
RECOGNITION: The flowers of *E. silvae* look like most members of the *E. paniculatum* Ruiz & Pavón group, the plants are erect, and in cultivation much taller than other species, with wider leaves, often over 4 cm, the inflorescence is paniculate, flowers simultaneous, green with a solid bright purple blotch on the disk, the distal margin of the lateral lobes of the lip being straight. *E. successivum* has similar coloring, though with successive flowers on an elongate raceme, and this species nearly always produces a new plantlet from the inflorescence, the distal margin of the lateral lobes of the lip being rounded (this species is found at some 200-300 m altitude and 250 km from the sea). *Epidendrum densiflorum* Hook. has similar but smaller flowers, sepals 10-12 mm long, the color is dirty green with the mark pale purple, petals 3-veined. *Epidendrum dipus* Lindl. has a much fleshier vegetative habit, a white lip, with the lobes of the midlobe wide at the base, triangular, and wider petals 3-4.5 mm wide.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Edmundo Ferreira Silva, Brazilian orchid collector, especially from the state of Bahía, who collected the type.

Authors: E. Hágsater & V. P. Castro **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM SILVERSTONEI Hágsater

Plate 383

EPIDENDRUM SILVERSTONEI Hágsater, *sp. nov.*

Holotype: COLOMBIA: Valle del Cauca: El Cairo; Las Amarillas, Cordillera Occidental, Sierra de los Paraguas, cerca de la base del Cerro Inglés, carretera El Cairo-Río Blanco, 2125 m, 29 Mar. 1988, ***P. Silverstone-Sopkin 3768, N. Paz & R. Eriksson*** CUVC. Isotypes: AMO! (illustration voucher), MO (xerox at AMO!).

Epidendro batesii Dodson simile sed floribus minoribus, labello integro margine eroso, petalis 1-nervatis, nectario ovarii dimidium penetranti.

Hierba epífita, ramificada, formando arbustos compactos, ca. 20 cm de alto. **Raíces** filiformes, en la base de los tallos inferiores, ca. 1.5 mm de grosor. **Tallos** ramificados, ligeramente flexuosos, lateralmente comprimidos, 4.5-10 cm de largo. **Hojas** 4-7, distribuidas a lo largo de los tallos, en el mismo plano de éstos, subcoriáceas; vaina tubular lateralmente comprimida, rugosa, 7-12 x 3-4 mm; lámina elíptica, aguda, ligeramente carinada, haz verde oscuro, envés verde claro plateado, 22-28 x 5-7 mm. **Espata** ausente. **Inflorescencia** apical, sésil, racemosa. **Brácteas florales** mucho más corta que el ovario, triangulares, obtusas, ca. 3 mm de largo. **Flores** sucesivas, una a la vez, no resupinadas, de color amarillo, el labelo blanco, columna blancuzca, antera verde, fragancia no registrada. **Ovario** no inflado, recto, no ornamentado, 25 mm de largo. **Sépalos** extendidos, oblongo-oblanceolados, obtusos, carinados hacia el ápice, 5-nervados, 12.5 x 4 mm. **Pétalos** extendidos, oblanceolados, redondeados, ligeramente falcados, 3-nervados, 12 x 3 mm. **Labelo** unido a la columna, entero, suborbicular, base profundamente cordada, margen irregularmente eroso, superficie cubierta por papilas, 9 x 10 mm; bicalloso; unicarinado, la carina roma y ancha recorriendo el centro hasta el ápice. **Columna** recta, gruesa, ápice redondeado, 6 mm de largo. **Clinandrio** reducido, entero. **Antera** reniforme, 4-locular. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** ocupando 3/4 partes de la cavidad estigmática. **Nectario** penetrando 1/2 del ovario, ornamentado con numerosas papilas cortas en el interior. **Cápsula** no vista.

Branching epiphyte, forming compact shrubs. **Roots** filiform. **Stems** branching, flexuose, laterally compressed. **Leaves** 4-7, distributed throughout the stems, on the same plane of the stem, subcoriaceous; sheath tubular, laterally compressed, rugose; blade elliptic, acute, somewhat carinate. **Inflorescence** apical, sessile, racemose. **Floral bracts** much shorter than the ovary, triangular, obtuse. **Flowers** successive, one at a time, non-resupinate, yellow, lip white, column whitish, anther green. **Sepals** spreading, oblong-oblanceolate, obtuse, carinate, 5-veined. **Petals** spreading, oblanceolate, rounded, 3-veined. **Lip** entire, suborbicular, deeply cordate at the base, surface papillate; bicallose; with a wide low keel running down the middle. **Column** straight, thick, apex rounded. **Clinandrium** reduced, entire. **Anther** reniform, 4-celled. **Rostellum** apical, slit. **Lateral lobes of stigma** very long. **Nectarium** penetrating half the length of the ovary, ornamented with numerous papillae.

OTHER SPECIMENS: COLOMBIA: Antioquia: Urrao; entre Urrao y Carmen de Atrato, 2440 m, *Escobar et al. 5355* AMO! **Chocó:** San José del Palmar; Cerro del Torrá, vertiente nororiental, plan grande abajo de la cumbre, *Silverstone-Sopkin 1750, Paz, Duque & Bayona* CUVC! MO! NY!

DISTRIBUTION AND ECOLOGY: Known only from the upper levels of the eastern slope of the Cordillera Occidental in Colombia, epiphytic in cloud forest and on the ground in disturbed herbaceous and bushy vegetation at 2125-2500 m altitude in the departments of the Chocó, Antioquia and Valle del Cauca. Flowering in January, March and August, probably over an extended period, as the flowers are successive.

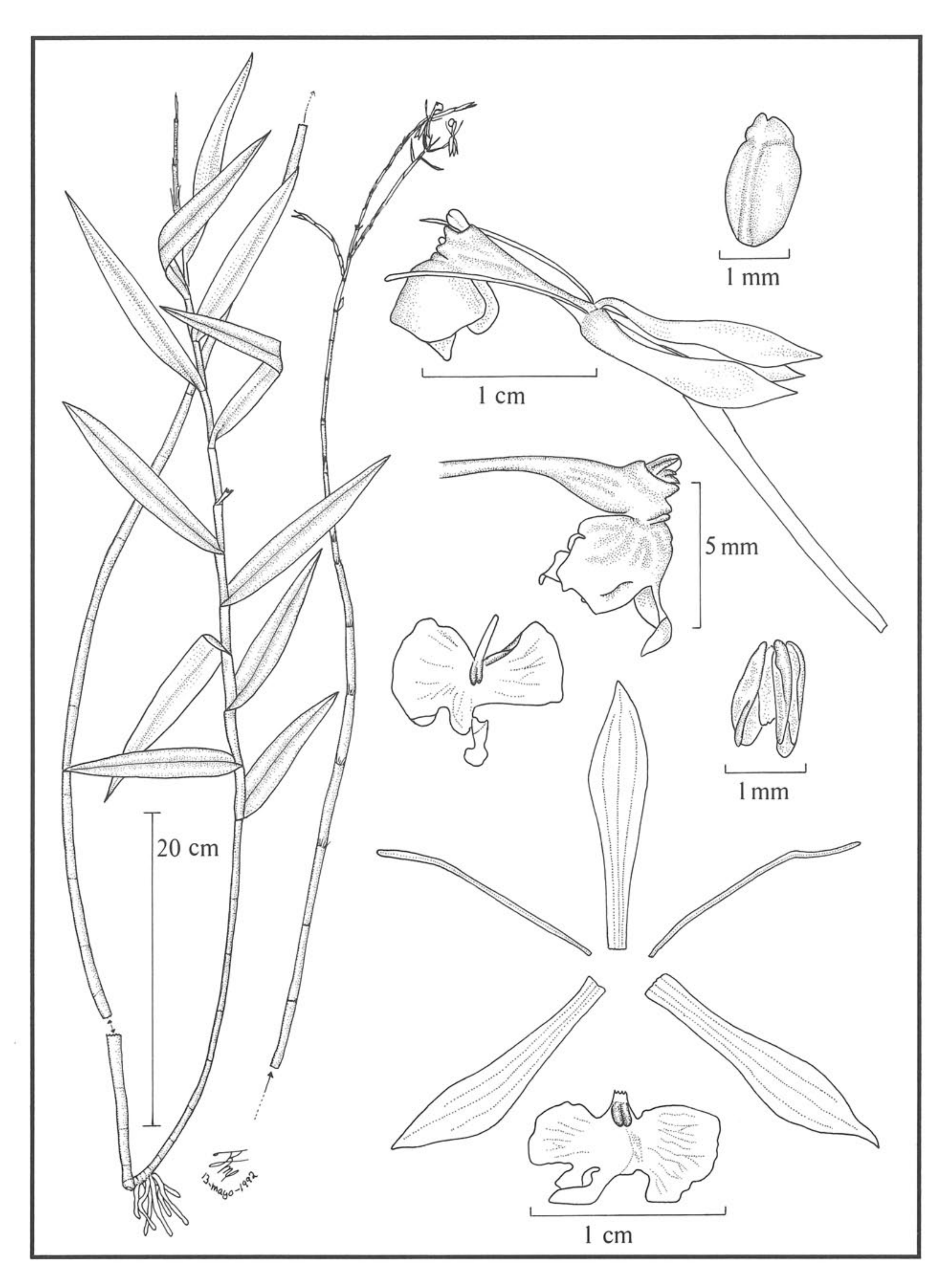
RECOGNITION: *Epidendrum silverstonei* has a compact, branching habit, with a short terminal inflorescence producing successive, non-resupinate flowers one at a time, suborbicular, cordate lip, the surface papillate. It is closely related to *E. batesii* which has somewhat larger flowers, the sepals being 17 mm long, the lip 3-lobed, with a small cuneate, emarginate midlobe, and the nectary penetrating the full length of the ovary. *Epidendrum laceratum* C. Schweinf. and *Epidendrum farallonense* Hágsater have 3-lobed lip, the lateral lobes deeply lacerate.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Philip A. Silverstone-Sopkin, botanist at the Universidad del Valle of Cali, Colombia, who collected several specimens including the type, and brought them to my attention.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM TACARCUNENSE Hágsater

Plate 384

EPIDENDRUM TACARCUNENSE Hágsater, *sp. nov.*

Holotype: PANAMA: Darién: Vicinity of Cerro Tacarcuna summit camp, 1500-1750 m, 31 Jan. 1975, ***A. Gentry & S. Mori 14043*** MO 2302085! (illustration voucher).

Epidendro turialvae Rchb. f. simile sed caulibus teretibus, inflorescentiae racemorum, pedunculo elongato, bracteis floralibus ovarii longitudinis dimidium aequantibus, columna in duos dentes in quoque laterem desinenti.

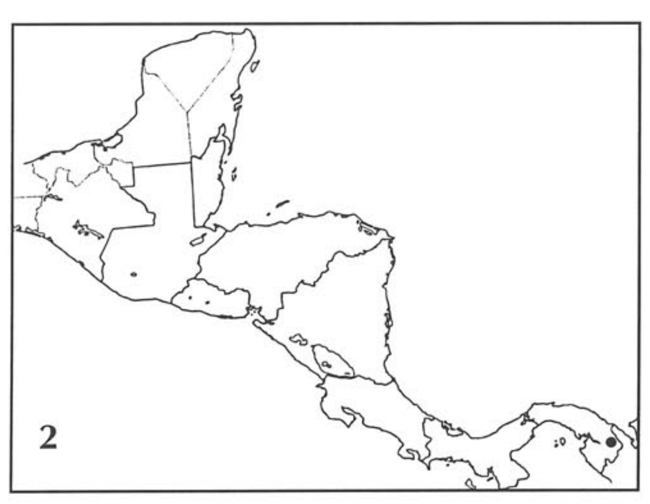
Hierba epífita, cespitosa, 80-130 cm de alto. **Raíces** basales, carnosas, ca. 1.5 mm de grosor. **Tallos** erectos, rectos, tipo caña, teretes, 60-80 x 0.4-0.6 cm; cubiertos en la base por vainas tubulares, papiráceas. **Hojas** numerosas, distribuidas a lo largo de los 2/3 apicales del tallo; vaina tubular, 3-5 x 0.5-0.6 cm; lámina articulada, angostamente elíptica a lanceolada, acuminada, gramínea, 10-15.5 x 1.4-2.2 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, del tallo maduro, mucho más larga que las hojas, florece durante varios años produciendo nuevos racimos de los nudos apicales del pedúnculo, 35 cm de largo; pedúnculo alargado, suberecto, largamente arqueado, 7-8 cm de largo, cubierto por brácteas cuando joven; racimos alargados, sucesivos, laterales, con raquis 1.5 cm de largo. **Brácteas florales** cerca de la mitad de largo del ovario, triangulares, acuminadas, 9-16 mm. **Flores** 5 por racimo, simultáneas, coloración verde, el labelo blanco con disco morado, la columna crema, sin fragancia reportada. **Ovario** filiforme, algo engrosado en el tercio apical, 22-24 mm de largo. **Sépalos** angostamente obovados, subespatulados, agudos, carnosos, reflexos, 3-nervados, 12-14 x 4 mm; los **laterales** algo falcados. **Pétalos** filiformes, obtusos, 1-nervados, 11-13 x 0.4 mm. **Labelo** unido a la columna, 3-lobado, base cordada, membranoso, 5 x 10 mm; bicalloso, los callos muy pequeños; disco con tres quillas romas, carnosas a todo lo largo de la lámina hasta el seno apical; lóbulos laterales dolabriformes, margen sinuoso; lóbulo medio bilobado, los lóbulos divaricados, angostamente oblongos, agudos, falcados, senos laterales profundos. **Columna** recta, delgada, termina en un par de ángulos agudos a los lados del rostelo y un par de dientes junto a los callos, 9 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, con una quilla muy baja y roma al frente, 4-locular. **Polinios** 4, tipo ala de pájaro, fuertemente aplanados, translúcidos, los interiores algo más pequeños; caudículas laminares, más cortas que los polinios; viscidio semilíquido, transparente. **Nectario** aparentemente poco profundo y delgado, penetrando menos de la mitad del pedicelo. **Cápsula** no vista.

Caespitose epiphyte. **Roots** fleshy. **Stems** terete, covered by tubular sheaths on basal 1/3, on upper 2/3 by leaf-bearing tubular sheaths. **Leaves** narrowly elliptic to lanceolate, acuminate. **Inflorescence** apical, from mature stem, elongate, much longer than apical leaf, flowering over several years, each flowering racemose, with an elongate peduncle. **Floral bracts** triangular, acuminate, about half as long as the ovary. **Flowers** 5 per raceme, simultaneous, sepals green, column cream-colored, lip white with disc purple. **Ovary** filiform, somewhat thickened in the apical third. **Sepals** narrowly obovate, subspathulate, acute, fleshy, reflexed, 3-veined. **Petals** filiform, obtuse, 1-veined. **Lip** 3-lobed, cordate at the base, membranaceous; bicallose; with 3-keels, fleshy, throghout the lip; lateral lobes dolabriform, margin sinuose; midlobe bilobate, the lobes divaricate, narrowly oblong, acute, falcate, lateral sinus deep. **Column** slender, straight, ending in two teeth on each side. **Anther** ovoid, 4-celled. **Pollinia** 4, bird-wing type, transparent, the inner pair slightly smaller; caudicles laminar; viscidium semiliquid.

RECOGNITION: *Epidendrum tacarcunense* is a member of the *E. turialvae* subgroup, within the *E. paniculatum* Ruiz & Pavón group and closely related to the former, from which it can be distinguished by the large plants, the terete stems, the very long floral bracts (9-16 mm), the flowers are green, with the lip white with a disk purple. *Epidendrum turialvae* from Nicaragua, Costa Rica and western Panama has the same general coloring but the floral bracts are short, 2-4 mm long, and the proportions of the lip are more equal in length to width. Other species of this group, *E. rodrigoi* Hágsater and *E. vieirae* Hágsater also have laterally compressed stems.

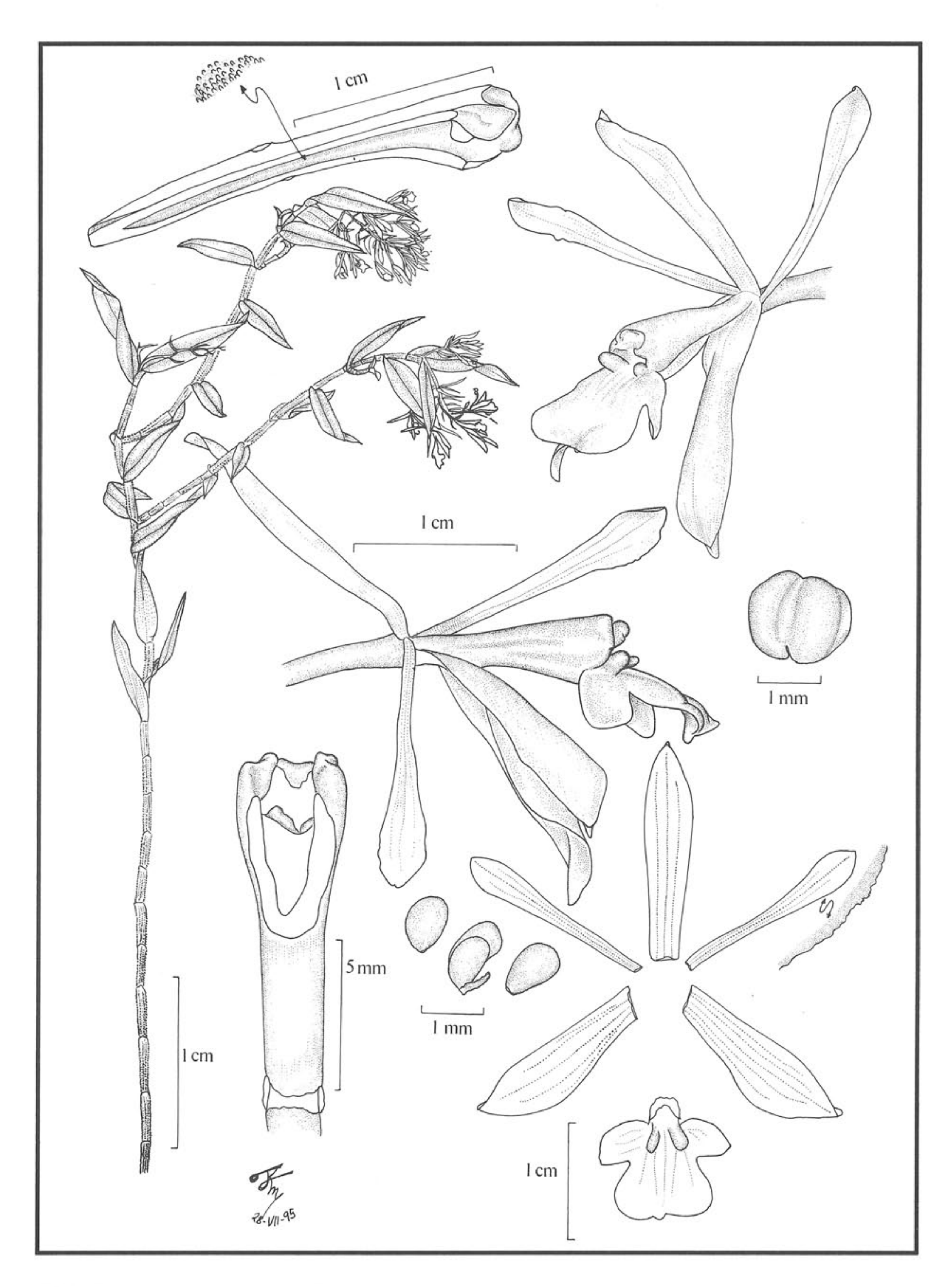
DISTRIBUTION AND ECOLOGY: Known only from the Serranía del Darién, on the border between Panama and Colombia, in lower montane wet forest, at 1500-1750 m altitude. Flowering in January.

CONSERVATION STATUS: DD (data deficient).



ETYMOLOGY: Named after the Cerro Tacarcuna, in the Serranía del Darién and close to the Colombian border, where the type specimen was collected.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM THOMPSONII Hágsater & Dodson

Plate 385

EPIDENDRUM THOMPSONII Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Morona-Santiago: Camino Gualaceo-Limón, ca. 36 km, 2360 m, 21 Nov. 1988, ***E. Hágsater 9628, C. H. Dodson, N. H. Williams, M. Whitten & F. G. Thompson*** QCNE! Isotype: AMO! (illustration voucher).

Epidendro trachychlaena Schltr. simile sed foliis minoribus et labelli margine integro.

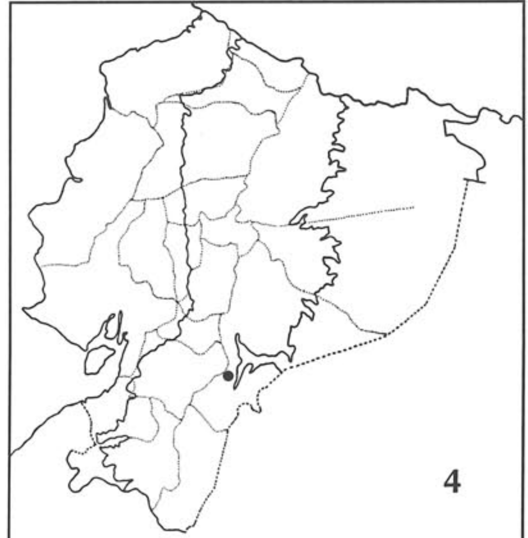
Hierba terrestre, monopodial, ramificada, 30-60 cm de alto. **Raíces** basales, carnosas, gruesas. **Tallos** ramificado hacia el ápice, las ramas menores que el tallo principal, tipo caña, teretes, rectos, el principal, ca. 45 x 0.4-0.5 cm, las ramas ca. 20 x 0.3-0.5 cm. **Hojas** numerosas en el principal, 7-8 en las ramas, alternas, herbáceas, distribuidas a lo largo de los tallos; vaina tubular, verrugosa y estriada, ca. 1.5-3 cm de largo; lámina angostamente elíptica a lanceolada, aguda, margen entero, lisa, verde, 2.5-8 x 1.2-1.5 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, paniculada, de un racimo principal y uno secundario de pocas flores cerca de la base, arqueado, 7-8 cm de largo; pedúnculo terete, recto, no ornamentado. **Brácteas florales** más cortas que el ovario, triangulares, acuminadas, 5-17 mm de largo. **Flores** ca. 20, sucesivas, casi todas abiertas a la vez, resupinadas, de color verde. **Ovario** ligeramente inflado en la mitad apical, terete, 15-23 mm de largo. **Sépalos** extendidos, libres, quilla dorsal inconspicua, glabros, membranáceos. **Sépalo dorsal** angostamente oblanceolado, agudo, mucronado, margen extendido, 3-nervado, 16-18 x 4 mm. **Sépalos laterales** angostamente obovados, agudos, mucronados, margen extendido, 5-nervados, 17-18 x 5 mm. **Pétalos** extendidos, angostamente espatulados, obtusos, margen extendido, finamente irregular, membranáceos, 3-nervados, 15-16 x 2.5 mm. **Labelo** unido a la columna, trilobado, 9 x 11 mm; bicalloso, callos subglobosos, divergentes; lóbulos laterales oblicuamente dolabriforme, obtusos, margen entero; lóbulo medio más grande, anchamente bilobado, mucronado, margen entero, 5 x 8 mm. **Columna** recta, delgada, 11 mm de largo. **Clinandrio** reducido, entero. **Antera** subesférica, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, más cortas que los polinios. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de un tercio del largo de la cavidad. **Nectario** penetrando 4/5 partes del ovario, delgado, ornamentado con papilas. **Cápsula** no vista.

Monopodial, branching, terrestrial **herb**. **Roots** fleshy, from the base of the plant. **Stems** branching from the upper parts of main stem, branches smaller. **Leaves** numerous on the main stem, 7-8 on the secondary stems, narrowly elliptic to lanceolate, herbaceous, distributed throughout the stems. **Inflorescence** apical, from the mature stem, arching, paniculate. **Flowers** ca. 20, successive, most open at the same time, resupinate, green. **Dorsal sepal** narrowly oblanceolate, acute, mucronate, 3-veined, membranaceous; **laterals** narrowly obovate, acute, mucronate, 5-veined. **Petals** narrowly spathulate, obtuse, 3-veined. **Lip** 3-lobed; bicallose, callus subglobose; lateral lobes obliquely dolabriform, obtuse, margin entire; midlobe widely bilobed, mucronate. **Column** straight. **Clinandrium** reduced, entire. **Anther** subspherical, 4-celled. **Pollinia** 4, obovoid, laterally compressed. **Nectary** penetrating 4/5 of the ovary, ornate with papillae.

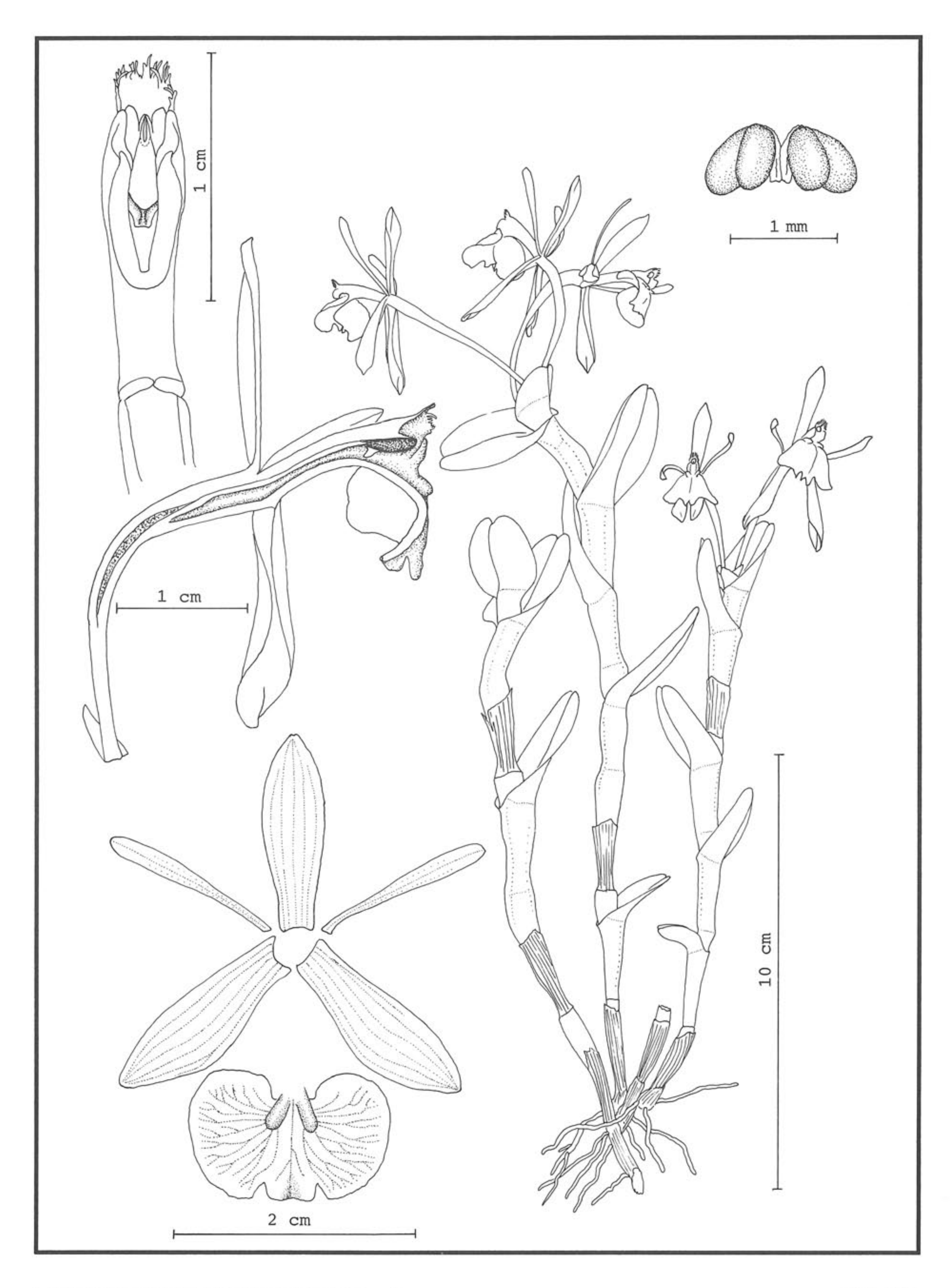
DISTRIBUTION AND ECOLOGY: Known only from Ecuador, from the eastern Cordillera, at 2360 m, terrestrial in wet upper montane forest. Flowering in November.

RECOGNITION: *Epidendrum thompsonii* belongs to the *Epidendrum cardiophyllum* Kraenzl. group which is recognized by its long erect, cane-like stems with subapical branching, the branches shorter, the rugose-warty leaf-sheaths, acute leaves. It is florally very similar to *Epidendrum trachychlaena* but the leaves of that species are much larger and fewer, being 8-15 x 2.5-4.8 cm, and the margin of the lip obscurely serrulate. *Epidendrum adamsii* Hágsater & Dodson has longer and narrower sepals and petals, more rounded lobes of the lip, a straight column, the leaves bilobed, not acute.

CONSERVATION STATUS: DD (data deficient).
ETIMOLOGY: In honor of Fred G. Thompson, a malacologist from the University of Florida who collected the type specimen while in a group field trip.



Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM THURSTONORUM Hágsater Plate 386

EPIDENDRUM THURSTONORUM Hágsater, *sp. nov.*

Holotype: COSTA RICA: Cartago: Cordillera de Talamanca, carretera Panameriacana al sur de Cartago, km 32.5, Rt 2, 6200 ft. (1880 m), col. 18 Mar. 1982, pressed 16 Apr. 1982, ***B. Thurston T-2671 sub E. Hágsater 6676*** AMO! (illustration voucher, flowers in spirit). Clonotype: 26 June 1982 CR!

Epidendro lagenocolumna Hágsater & L. Sánchez simile sed foliis minus quam 4 cm longis, columna ad basem non inflata, clinandrii margine fimbriato, differt.

Hierba epífita, cespitosa, 19-25 cm de alto. **Raíces** basales, filiformes, 0.5-1 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ligeramente flexuosos, 15-20 cm de largo. **Hojas** 4-8, distribuidas a lo largo del tallo; vaina lateralmente comprimida, lisa, 2 cm de largo; lámina elíptica, ápice irregularmente bilobado, 2.8-3.7 x 1.5-1.7 cm. **Espata** ausente. **Inflorescencia** apical, corimbosa, florece una sola vez, subsésil, 4-5 cm de largo; pedúnculo reducido, 0.5-0.8 cm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, agudas, 5-8 mm de largo. **Flores** 3-4, resupinadas, simultáneas, verdes. **Ovario** no inflado, terete, no ornamentado, 20-35 mm de largo. **Sépalos** extendidos, glabros, libres, subcoriáceos, oblanceolados a obovados, obtusos a redondeados, margen entero, revoluto, 5-nervados, 18-21 x 4.5-6.5 mm; los **laterales** oblicuos. **Pétalos** entreabiertos, angostamente oblanceolados, obtuso, margen entero, extendido, 3-nervados, membranáceos, 17-20 x 1.2-1.7 mm. **Labelo** unido a la columna, cordado en la base, trilobado, 11-12 x 15-16 mm; bicalloso, los callos subglobosos; lóbulos laterales obovados, margen entero, 4.5-5 x 8-9 mm; lóbulo medio subrectangular a subtrapezoide, ápice truncado, 2-2.4 x 3-4 mm. **Columna** ligeramente arqueada, 13-14 mm de largo. **Clinandrio** prominente, fimbriado. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas semejantes en longitud a los polinios, suaves y granulosas; viscidio viscoso, translúcido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no ornamentado. **Cápsula** no vista.

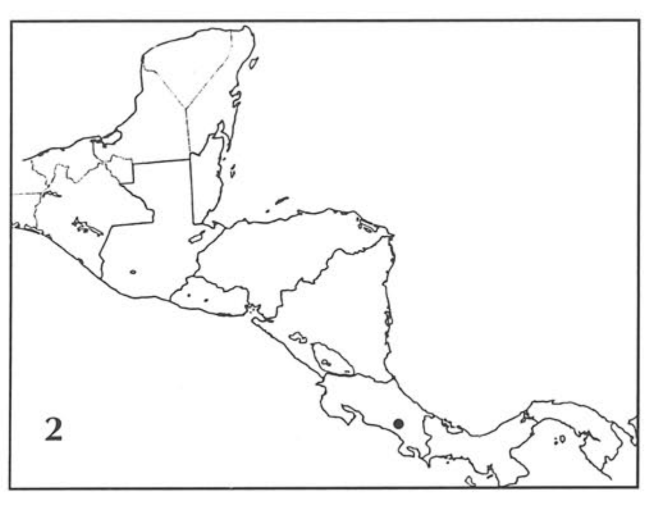
Caespitose, epiphyte. **Stems** simple, reed-like, laterally compressed, slightly flexuose. **Leaves** 4-8, elliptic, apex bilobed. **Inflorescence** apical, subsessile. **Floral bracts** much shorter than the ovary, triangular, acute. **Flowers** 3-4, resupinate, simultaneous, green. **Ovary** thin, terete, unornamented. **Sépals** spreading, glabrous, free, subcoriaceous, oblanceolate-obovate, obtuse to rounded, margin entire, revolute, 5-veined; the **laterals** oblique. **Petals** spreading, narrowly oblanceolate, obtuse, margin entire, membranaceous, 3-veined. **Lip** united to the column, 3-lobed; bicallose, the callus subglobose; lateral lobes obovate, entire; midlobe subquadrate to subtrapezoid, truncate. **Column** slightly arched. **Clinandrium** prominent, fimbriate. **Anther** ovoid, 4-celled. **Nectary** penetrating 1/3 of the ovary. **Capsule** not seen.

OTHER SPECIMENS: COSTA RICA: Cartago: Cervantes, carretera entre Cartago y Turrialba, 9°50'20"N 83°40'52"W, *Hágsater 9493 et al.* AMO! INB! Along the Río Reventado, North of Cartago, *Standley 49522 et al.* AMES! US! 1.3 km down (W) road to San Cristóbal Norte from Pan Am Highway, *Walter 79501* CR! **Puntarenas:** Buenos Aires, Ujarras Cuenca Superior, Río Ceibo, 9°21'10"N 83°16'38"W, *Valerio 173* MO!

OTHER RECORDS: COSTA RICA: Cartago: Cordillera de Talamanca, carretera panamericana al sur de Cartago, *Hágsater 6676* ENCB (illustration)! MEXU (illustration)! Cervantes, carretera entre Cartago y Turrialba, 9°50'20"N 83°40'52"W, *Hágsater 9493 et al.* AMO (flowers in spirit)x2!

DISTRIBUTION AND ECOLOGY: Known only from Costa Rica, Cordillera de Talamanca. On trees, in humid montane forest and cloud forest, from 1400 to 2500 m altitude. Flowering throughout the year.

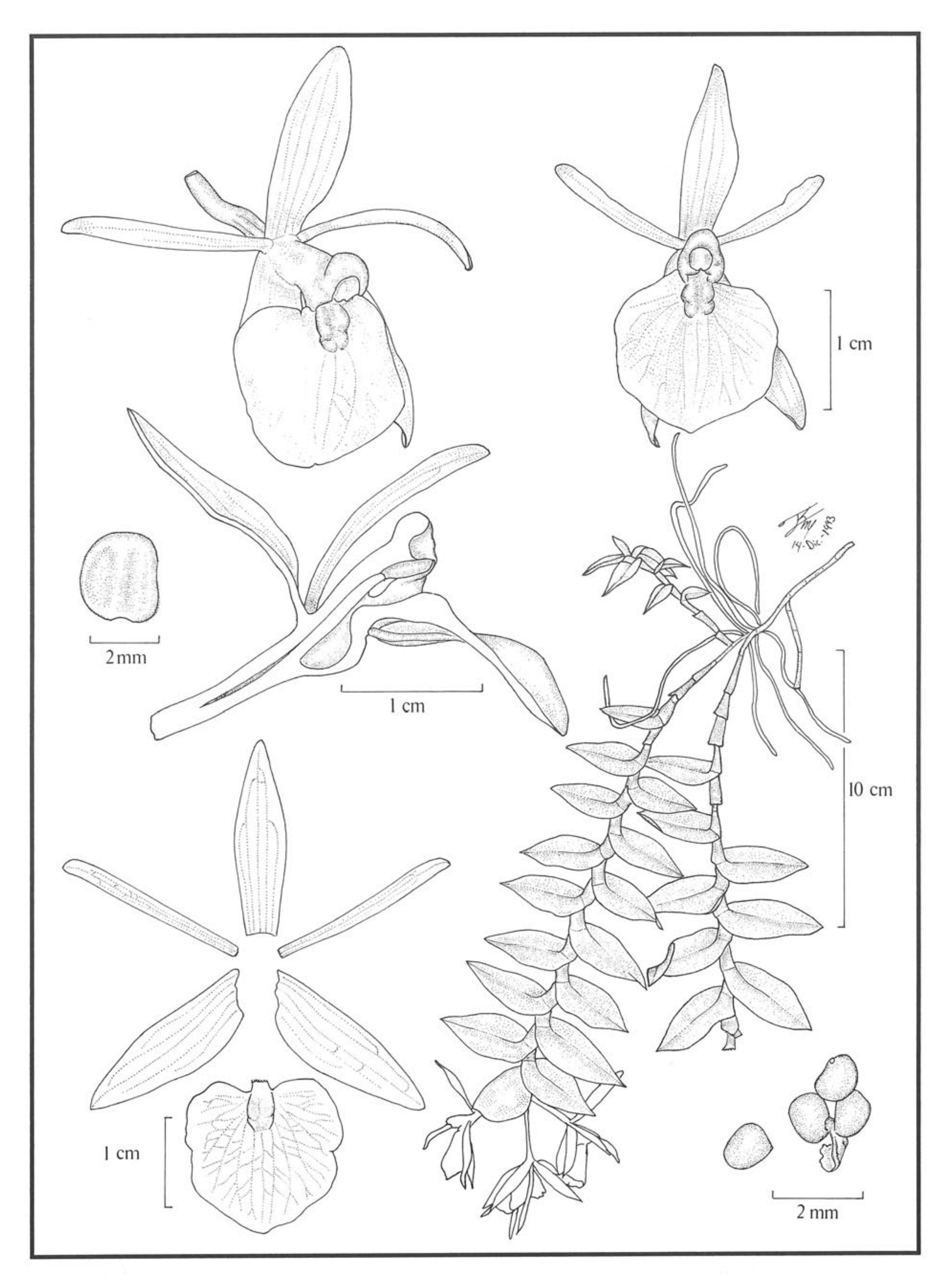
RECOGNITION: This species can be recognized by laterally compressed stems, 4-8, elliptic leaves, shorter than 4 cm, column not inflated at the base, and prominent fimbriate clinandrium. It's similar to *Epidendrum lagenocolumna* which has leaves longer than 4 cm, column inflated at the base and non-fimbriate clinandrium. *Epidendrum firmum* Rchb. f., has smaller plants and flowers and leaves narrowly lanceolate to narrowly ovate-elliptic, 0.6-1.2 cm wide.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The name *thurstonorum* honors William and Beatrice Thurston of Durango, Colorado, who colected the specimen type, and have collaborated with various orchid taxonomists, especially in Mexico, Costa Rica and Ecuador.

Authors: E. Hágsater **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM TIGRIPHYLLUM Hágsater

Plate 387

EPIDENDRUM TIGRIPHYLLUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: Antioquia: Represa La Colina, 2500 m, floreció en cultivo en Colomborquídeas, 1 Apr. 1993, ***E. Valencia sub R. Escobar 5339*** AMO! (illustration voucher).

Epidendro stanhopeano Kraenzl. simile sed labello leviter cordato subrotundato margine integro, callis duobis bilobatis carnosis, clinandrio carnoso prominenti.

Hierba epífita, colgante, subcespitosa, 15-22 cm de largo. **Raíces** filiformes, 0.5-1 mm de grosor. **Tallos** tipo caña, teretes, 11-18 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo del tallo y en el mismo plano del tallo; vaina tubular, 0.4-1 cm de largo; lámina ovado-lanceolada, aguda, de color verde grisáceo con barras transversales moradas, 16-38 x 0.5-1.5 cm. **Espata** prominente, semiovada, truncada, conduplicada, ocultando totalmente el pedúnculo, 1.7-2.5 x 1.0-1.5 cm. **Inflorescencia** apical, del tallo maduro, sésil; pedúnculo hasta de 1.5 cm de largo. **Brácteas florales** muy pequeñas, ca. 2 mm de largo. **Ovario** conspícuamente dilatado en el ápice, detrás de los sépalos laterales, 13-19 mm de largo. **Flores** 3-4, resupinadas, simultáneas, verdoso-grisáceas, el labelo ligeramente teñido de rosado hacia los lados, columna teñida de rojo, clinandrio carnoso, verde claro, sin fragancia. **Sépalos** elípticos a lanceolados, agudos, margen extendido, 5-nervados (las nervaduras laterales menores), 22-23 x 6-7 mm; los **laterales** algo oblicuos. **Pétalos** ligulados, obtusos, margen extendido, 3-nervados, 21 x 1.6-2 mm. **Labelo** unido a la columna, entero, ligeramente cordado, suborbicular, vagamente lobado, margen entero, 1.6-1.8 x 1.6-1.8 cm; con un callo en la base, prominente, carnoso, dividido en 4 lobos, dos superpuestos a los otros dos. **Columna** recta, 10.5-11 mm de largo. **Clinandrio** prominentemente expandido, sobrepasando ligeramente el cuerpo de la columna, muy carnoso, entero. **Antera** subesférica, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos, caudículas granulosas, en dos pares; viscidio semilíquido, prominente. **Lóbulos laterales del estigma** pequeños, de un tercio de la cavidad estigmática. **Nectario** poco profundo, penetrando algo detrás del perianto y formando un vesícula prominente detrás de los sépalos laterales, constreñido a la mitad de la columna, no ornamentado. **Capsula** no vista.

Pendent, subcespitose epiphyte. **Roots** filiform. **Stems** cane-like, terete. **Leaves** numerous, distributed throughout the stem and in the same plane; blade ovate-lanceolate, grayish-green with irregular transverse maroon bars. **Spathe** prominent, semiovate, truncate, conduplicate, completely covering the peduncle. **Inflorescence** apical, from the mature stem, racemose. **Ovary** conspicuously dilated at the apex behind the lateral sepals. **Flowers** 3-4, simultaneous, resupinate, grayish-green, the lip somewhat tinged pink, column tinged reddish, clinandrium apple green. **Sepals** elliptic to lanceolate, acute, margins spreading; the **laterals** somewhat oblique. **Petals** ligulate, obtuse, margins spreading, 3-veined. **Lip** united to the column, slightly cordate, suborbicular, vaguely lobate, margin entire; with a prominent callus at the base, divided into 4 lobes, one pair superimposed on the other, fleshy. **Column** straight. **Clinandrium** prominent, very fleshy, expanded, somewhat surpassing the body of the column. **Anther** subspherical, 4-loculed. **Pollinia** 4, subequal, obovoid, laterally compressed; caudicles granulose; viscidium semiliquid. **Nectary** short, forming a prominent vescicle behind the lateral sepals.

OTHER SPECIMENS: COLOMBIA: Antioquia: Municipio de Guadalupe: Represa de Miraflores, *Colomborquídeas sub Hágsater 11533* AMO (spirit, illustration)!

DISTRIBUTION AND ECOLOGY: Known only from Colombia, department of Antioquia, north of Medellín at around 2500 m altitude. Flowering in April (and December in cultivation in Mexico City).

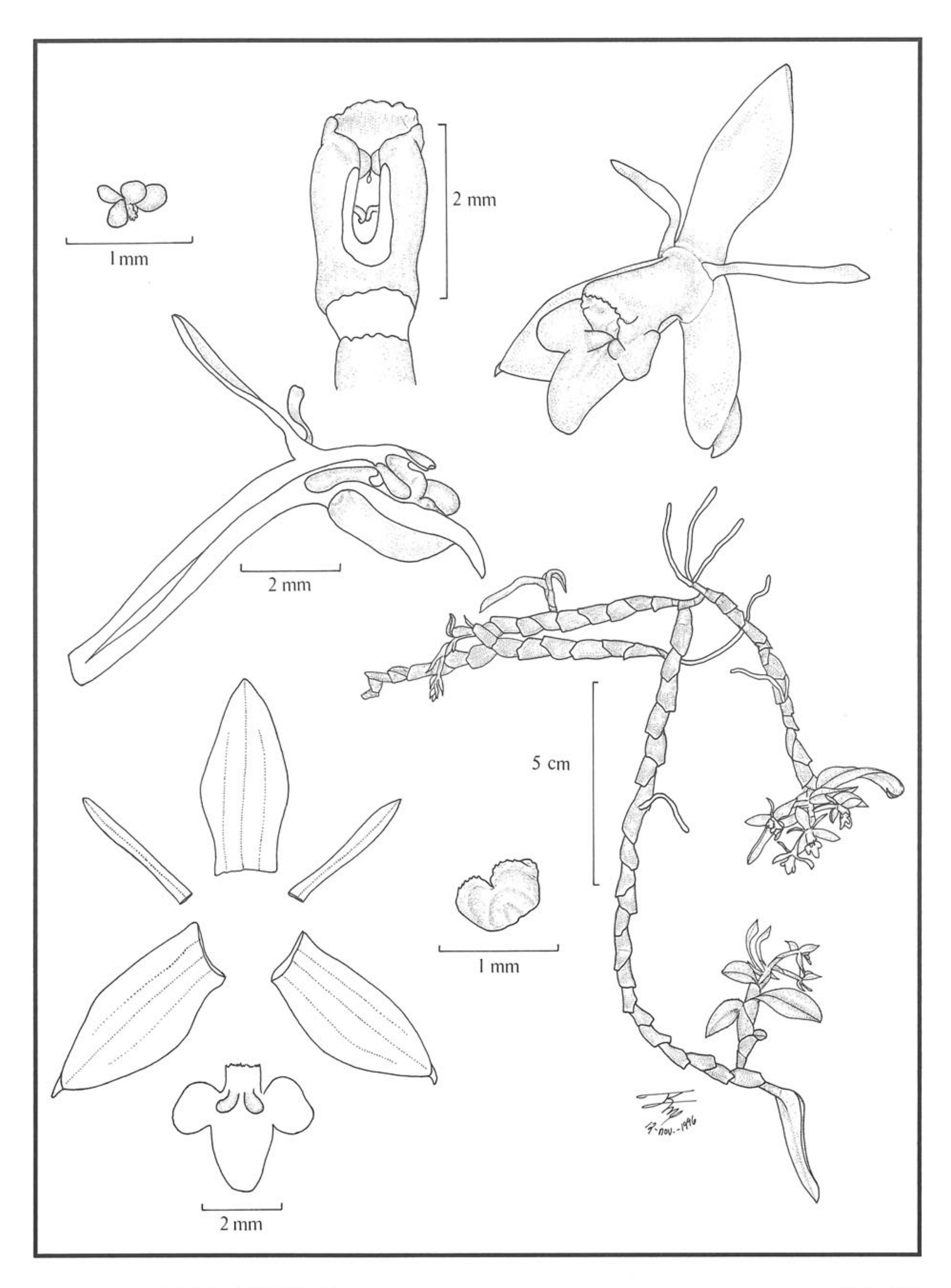
RECOGNITION: *Epidendrum tigriphyllum* belongs to the *Epidendrum megalospathum* Rchb. f. group with a prominent obliquely ovate spathe. It is closely related to *Epidendrum stanhopeanum* which has smaller, greenish flowers dotted with purple, the lip semicircular, deeply cordate, the margins finely dentate. *Epidendrum miradoranum* Dodson & Bennett is most similar but can be distinguished by the two small simple callus, orbicular, deeply cordate lip, the wider petals (5 vs 2 mm), the nectary not being narrowed at the middle of the column. *Epidendrum escobarianum* Garay has a cordate, narrowly acuminate lip deep red in color and a small nectary which does not form a vesicle behind the sepals. *Epidendrum obliquifolium* Ames, F. T. Hubb. & C. Schweinf. and *Epidendrum plagiophyllum* Hágsater have much smaller flowers. All plants except *E. miradoranum* and *E. plagiophyllum* have the leaves marked with transverse maroon bands.



CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Tiger-leaved, in reference to the leaves which have maroon, transverse bands, a feature common to several species in this group but rare in the genus.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM TINGO-MARIAE Hágsater

Plate 388

EPIDENDRUM TINGO-MARIAE Hágsater, *sp. nov.*

Holotype: PERU: Huanuco: Leoncio Prado: Tingo María, hort. J. & L. Orchids, ***J. & L. Orchids sub E. Hágsater 11840*** AMO! (in spirit, illustration voucher).

Epidendro milenae Dodson & Vásquez simile sed clinandrio prominenti carnoso eroso, columna leviter arcuata, anthera viridi.

Hierba epífita colgante, ramificada, ca.15 cm de largo. **Raíces** filiformes, de la base de los tallos y la base de las ramas, ca. 0.5 mm de grosor. **Tallos** ramificados, de la parte media y superior de los tallos anteriores, frecuentemente del ápice del tallo anterior, lateralmente comprimidos, 2.5-5 cm de largo, pero pueden parecer mucho más largos al estar superpuestos unos a otros. **Hojas** 3-9, distribuidas a lo largo del tallo, equidistantes; vaina foliar ancipitosa, estriada, 5-10 x 2-5 mm; lámina articulada, ovado-lanceolada, aguda, suculenta, 10-18 x 4-8 mm. **Espata** ausente. **Inflorescencia** apical, colgante, cortamente racemosa, ca. 15 mm de largo. **Brácteas florales** triangulares, acuminadas, dorsalmente carinadas, progresivamente más pequeñas. **Flores** ca. 4, simultáneas, resupinadas, de color verde claro. **Ovario** no inflado ni formando vesícula, 6.5 mm de largo. **Sépalos** extendidos, elípticos, agudos, 3-nervados, margen extendido, 4.5 x 2 mm; los **laterales** ligeramente oblicuos, carinados y aristados. **Pétalos** extendidos, lineares, agudos, 1-nervados, 3.5 x 0.4 mm. **Labelo** unido a la columna, carnoso, trilobado, 2.6 x 3.3 mm; bicalloso, callos subglobosos, divergentes, poco prominentes; disco sin quilla central; lobulos laterales más pequeños que el medio, suborbiculares, redondeados; lóbulo medio subtriangular, redondeado. **Columna** ligeramente arqueada, 2.5 mm de largo. **Clinandrio** prominente, 3-lobado, eroso. **Antera** subreniforme, no ornamentada, 4-locular. **Polinios** 4, obovados, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, ligeramente más cortas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** largos, pero ocupando solo 1/3 del largo de la cavidad estigmática. **Nectario** sin penetrar detrás del perianto, dilatado, no ornamentado. **Cápsula** no vista.

Epiphytic, pendent **herb**. **Stems** laterally compressed, completely covered by imbricating, foliaceous sheaths, new stems produced from the apex or from the middle of the previous stem in older plants. **Leaves** articulate, ovate-lanceolate, acute, succulent. **Inflorescence** apical, short, racemose. **Flowers** ca. 4, simultaneous, pale green. **Ovary** neither inflated nor forming a vescicle. **Sepals** elliptic, acute, 3-veined; the **laterals** oblique, dorsally keeled and aristate. **Petals** linear, acute, 1-veined. **Lip** 3-lobed, fleshy; bicallose, callus subglobose, divergent; without any central keel; lateral lobes suborbicular; midlobe subtriangular, rounded. **Column** slightly arched. **Clinandrium** prominent, 3-lobed, erose. **Anther** subreniform, unornamented, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles granular, shorter than the pollinia; viscidium semiliquid. **Nectary** not penetrating behind the perianth, wide, unornamented.

OTHER RECORDS: PERU: Pasco: Oxopampa, Cacazú, *Bennett 7468* AMO (xerox of illustration)! USM.

DISTRIBUTION AND ECOLOGY: Only the type specimen seen. Flowered in cultivation in Mexico in November. The species is apparently sympatric with *Epidendrum nanun* C. Schweinf. (see Ic. Orch. Peruv. pl. 246. 1995).

RECOGNITION: *Epidendrum tingo-mariae* belongs to the *E. nanum* group, and can be recognized by its 3-lobed lip, the slightly arched column with a prominent, erose clinandrium, the green flowers, with the anther also green, and the short nectary that does not penetrate further than the perianth. *Epidendrum milenae* recorded from both Bolivia and Ecuador, to be expected in Peru, has green flowers with a prominent purple anther, straight column with a short, entire clinandrium. *Epidendrum nanosimplex* Hágsater has a simple, entire lip, the vescicle of the ovary occupying about 1/3 of the ovary, and the entire clinandrium which slightly covers the anther. *Epidendrum madsenii* Hágsater & Dodson has a 3-lobed lip, a triangular, acute midlobe, a prominent dentate clinandrium, and the ornamentation of the anther consisting of a transverse, dentate process in front. *Epidendrum macasense* Hágsater & Dodson has shorter, narrower leaves, narrower petals, an unornamented anther, and an ovary which is not inflated and swollen into a vescicle at the base. In *Epidendrum bonitense* Hágsater & Dodson, the nectary does not reach the base of the ovary, the clinandrium is barely erose and the sepals are 4-5-veined, the midlobe of the lip is short-subquadrate and obtuse. *Epidendrum nanum* has larger flowers, the sepals being 8-11 mm long, a long dentate clinandrium, and the midlobe of the lip triangular, acuminate. *Epidendrum lueri* Dodson & Hágsater, is similar but has a differently dentate clinandrium, shorter midlobe of the lip and a prominent front ornamentation of the anther.

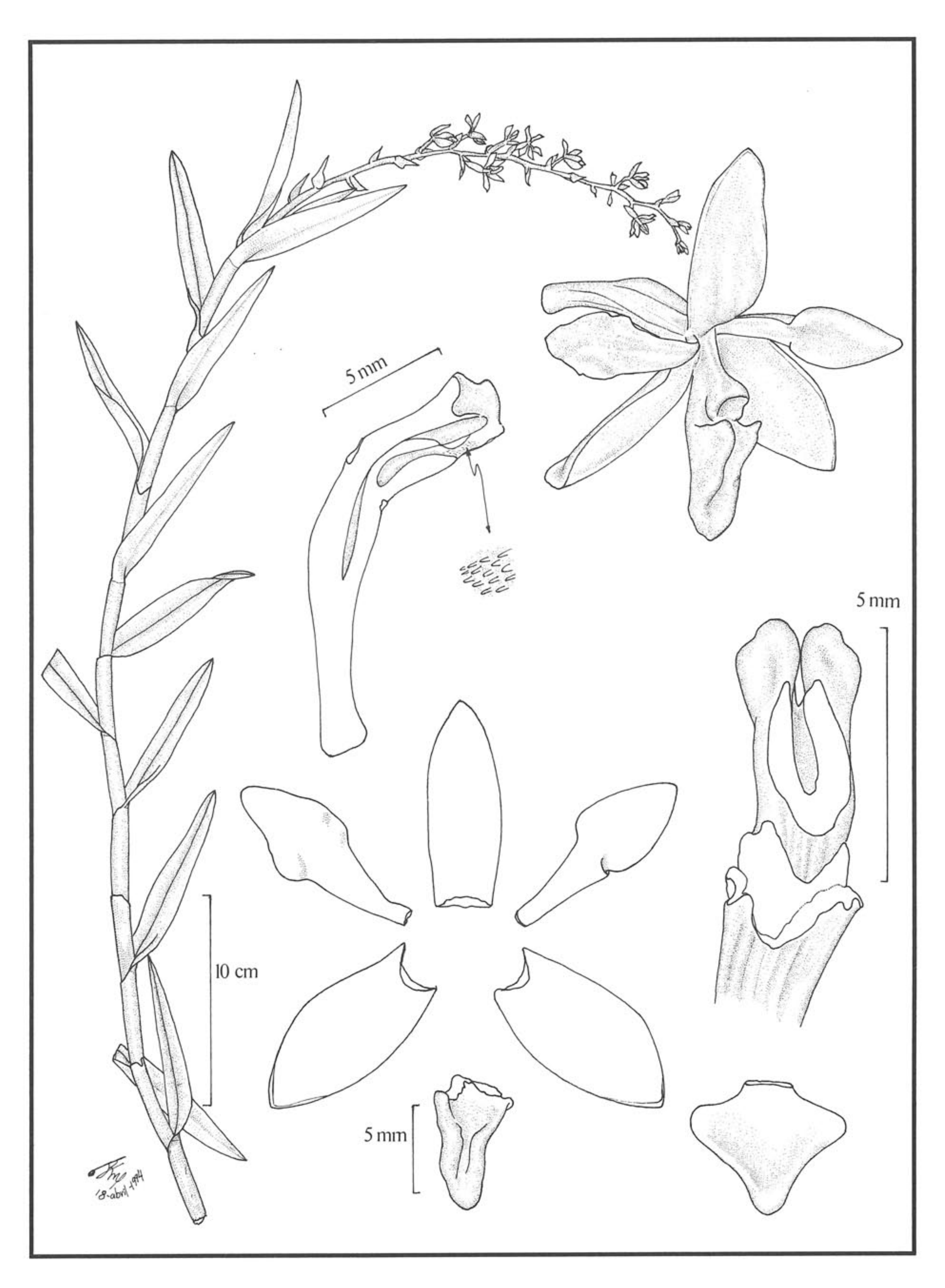


CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: The name refers to the type locality of Tingo María in Perú, which has been visited by many orchid collectors.

NOTE: In comparing the illustrations and description of *E. milenae* and *E. nanopsis* Dodson & Hágsater, it is apparent that they are one and the same, and therefore the latter has to be relegated to syonymy:
Epidendrum milenae Dodson & Vásquez, Ic. Pl. Trop. II(3): 223, 1989.
Synonym: *Epidendrum nanopsis* Dodson & Hágsater, Ic. Pl. Trop. II(5): 477, 1989.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM TRULLICHILUM Hágsater & Dodson Plate 389

EPIDENDRUM TRULLICHILUM Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Azuay: Páramo de Matanga, 18 km on road Sisig-Gualaquiza, quebrada and river cataract, montane forest, 3°07'S 78°49'W, 2800 m, 14 Dec. 1980, ***L. Holm-Nielsen 29559, J. Jaramillo & F. Coello*** AAU! (illustration voucher).

Epidendro orthophyllo Hágsater & Dodson simile sed foliis angustioribus, labello late trullato, petalis obtrullatis-spathulatis, clinandrio carnoso.

Hierba terrestre o litófita, ramificada, ca. 70-100 cm de alto. **Raíces** carnosas, de la base del tallo principal. **Tallos** erectos, ramificados cuando maduros, tipo caña, 50 x 0.7 cm. **Hojas** distribuidas a lo largo de todo el tallo y subparalelas a éste; vaina tubular, finamente rugosas, estriadas, hasta 4.5 cm de largo; lámina lanceolada, aguda, margen hacia el ápice finamente eroso,8.5-9 x 1.5-1.7 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro o de las ramificaciones, florece una sola vez, racemosa, erecta, 24 cm de largo; pedúnculo en ocasiones con una bráctea foliosa u hoja reducida en la base. **Brácteas florales** prominentes, del mismo largo que el ovario, progresivamente más cortas, abiertas, lanceoladas, 5-16 mm de largo. **Flores** numerosas, no resupinadas, sucesivas, aunque la mitad puede estar abierta a la vez, carnosas, color pardo, los pétalos amarillos en la base, labelo amarillento. **Ovario** no inflado, no ornamentado, 8-12 mm de largo. **Sépalo dorsal** reflexo, angostamente elíptico, obtuso, carnoso, glabro, 9-11 x 4-4.5 mm. **Sépalos laterales** entreabiertos, elípticos, algo oblicuos, obtusos, carnosos, con una quilla dorsal hacia el ápice, glabros, 9-12 x 4.5-5.5 mm. **Pétalos** extendidos, obtrulado-espatulados, ápice agudo-redondeado, carnosos, 11 x 4.5 mm. **Labelo** unido a la columna, entero, carnoso, ampliamente trulado, el ápice engrosado-redondeado, se puede extender una vez rehidratado sin romperse, en posición natural los lados abrazando el ápice de la columna, 7 x 9 mm; ecalloso; sin quillas basales. **Columna** recta, algo doblada en la inserción con el ovario, gruesa, 5-6 mm de largo, el ápice con un lóbulo amplio redondeado y oblicuo de cada lado. **Clinandrio** corto, carnoso, entero. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** alargados, de 1/2 del largo de la cavidad estigmática. **Nectario** poco profundo, apenas penetrando hasta el perianto, ornamentado con papilas alargadas, escasas, frente a la cavidad estigmática, recostadas y dirigidas hacia el interior. **Cápsula** no vista.

Terrestrial or lithophytic, branching **herb**. **Roots** fleshy, from the base of the main stem. **Stems** cane-like, erect, branching when mature. **Leaves** distributed throughout the stems; sheath finely rugose, striated; blade subparallel to the stem, lanceolate, margin finely erose, those of the main stem larger than of the branches. **Inflorescence** apical, from the main stem or from the branches, racemose, erect, occasionally with a basal foliose bract or small leaf. **Floral bracts** prominent, as long as the ovary, lanceolate. **Ovary** not inflated, not ornamented. **Flowers** numerous, successive, although half may be open at one time, non-resupinate, fleshy, brown, the petals yellow at base, lip yellowish. **Dorsal sepal** reflexed, narrowly elliptic, obtuse, fleshy. **Lateral sepals** half-spreading, elliptic, somewhat oblique, obtuse, with a dorsal apical keel, fleshy. **Petals** spreading, obtrullate-spathulate, acute-rounded, fleshy. **Lip** entire, widely trullate, acute-rounded, fleshy, surrounding the apex of the column in natural position. **Column** straight, somewhat bent downwards at the insertion with the ovary, thick, with a wide lobe on each side at the apex. **Clinandrium** short, fleshy, entire. **Rostellum** subapical, slit. **Lateral lobes of the stigma** long, 1/2 the length of the stigmatic cavity. **Nectary** shallow, not penetrating behind the perianth, ornamented with scarce, elongate papillae in front of the stigmatic cavity, reclining and directed inwards.

RECOGNITION: *Epidendrum trullichilum* belongs to the *pidendrum macrostachyum* Lindl. group and is recognized by its erect leaves, subparallel to the stem, widely trullate lip, obtrullate, acute-rounded petals and fleshy clinandrium. It is closely related to *Epidendrum orthophyllum* which has however, wider leaves, larger floral bracts, the lip triangular, somewhat cordiform, acute, with a short, obsolete clinandrium. *Epidendrum oxycalyx* Hágsater & Dodson has acuminate floral segments. *Epidendrum palaciosii* Hágsater & Dodson has numerous simultaneous flowers, the sepals muriculate outside. *Epidendrum macrostachyum* has a widely cordiform lip and ligulate petals.

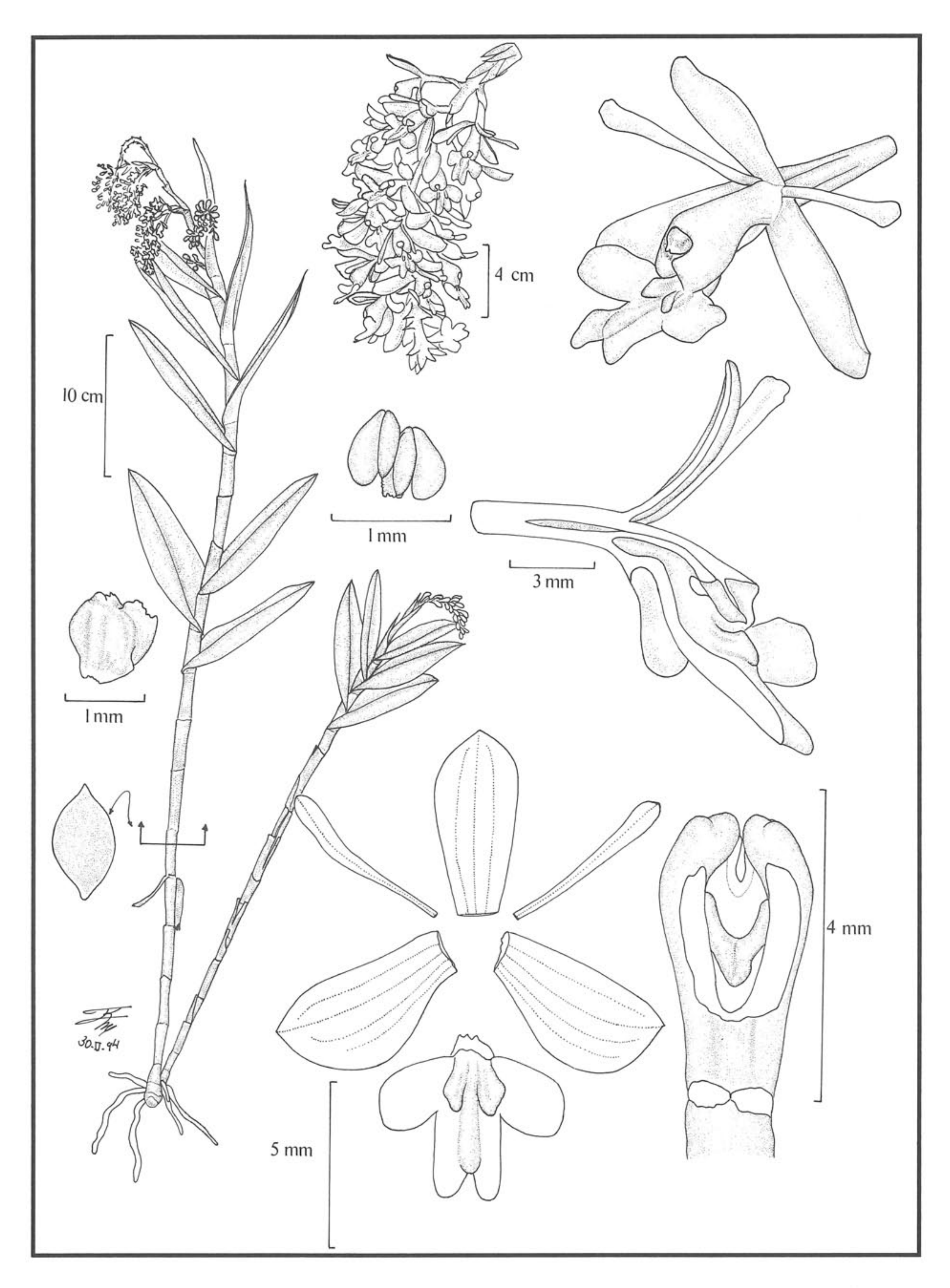
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DISTRIBUTION AND ECOLOGY: Known olny from Ecuador in páramo at about 2800 m altitude, terrestrial or on rocks in montane forest, in the Andes.

CONSERVATION STATUS: Unkown.

ETYMOLOGY: From the Latin "*trullatus*" angular ovate, in the shape of a bricklayer's trowel, and the Greek "*χειλος*" lip, in reference to the trowel-shaped lip, which separates this species from others of the macrostachyum group which have either cordiform or triangular lips.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM TUXTLENSE Hágsater, García-Cruz & L. Sánchez **Plate 390**

EPIDENDRUM TUXTLENSE Hágsater, García-Cruz *et* L. Sánchez, *sp. nov.*

Holotype: MÉXICO: Veracruz: Carretera Xalapa-Mizantla, 31 km adelante de Chiconquiaco, ***I. Aguirre-Olavarrieta 1268 & G. Salazar*** AMO! (illustration voucher).

Epidendro polyantho Lindl. simile sed caulis ancipitibus in dimidio supero, racemo compacto densoque, floribus minoribus et labelli lobulis lateralibus suborbicularibus recedit.

Hierba epífita, cespitosa, erecta, 35-84 cm de alto. **Raíces** basales, carnosas, filiformes, 2-3.2 mm de grosor. **Tallos** sencillos, teretes en la base, ancipitosos en la mitad superior, rectos, 20-74 x 0.35-1.1 cm. **Hojas** 5-18, distribuidas a lo largo del tallo, subcoriáceas; vaina tubular, ancipitosa, papirácea, 1.7-4.5 cm de largo; lámina angostamente elíptica a lanceolada, cortamente acuminada, mucronada, ligeramente carinada, 4-16 x 1.4-4 cm. **Espata** ausente. **Inflorescencia** apical, pluriracemosa, racemosa en la primera floración, florece de los nudos de la inflorescencia primaria en años posteriores, dando la apariencia de un racimo compuesto, con varios racimos a la vez, 10-30 cm de largo, el racimo compacto, denso; pedúnculo corto, lateralmente comprimido, 5-10 cm de largo; cubierto por 2-4 brácteas imbricadas, oblongo triangulares, atenuadas, agudas, envolventes, 2-2.5 cm de largo. **Brácteas florales** más cortas que el ovario, abrazadoras, triangulares, agudas, 2-2.5 x 1-1.5 mm. **Flores** 20-32 por racimo, simultáneas, resupinadas, perianto amarillo-anaranjado, columna y disco del labelo blancos, fragancia nocturna seminal. **Ovario** terete, no ornamentado, 4-7 x 0.8-1 mm. **Sépalos** casi extendidos, obovados, obtusos, mucronados, margen extendido, entero, 3-nervados, las venas laterales se ramifican hacia el ápice, 5-7.5 x 2-3.5 mm; los **laterales** oblicuos, 5-nervados. **Pétalos** casi extendidos, angostamente oblanceolados, obtusos, margen extendido, entero, 1-nervados, 5.5-6.5 x 0.5-0.7 mm. **Labelo** unido a la columna, trilobado, base truncada, 3-5 x 4-5.7 mm; bicalloso, callos laminares, prominentes; unicarinado, carina evidente, prolongándose hasta el seno del lóbulo medio; lóbulos laterales suborbiculares, margen entero, ápice redondeado; lóbulo medio oblongo-subrectangular, margen entero, ápice bilobado. **Columna** ligeramente arqueada, obcónica, delgada, 3-4.4 x 1.5-1.8 mm. **Clinandrio** reducido, entero. **Antera** obovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas suaves y granulosas, de longitud similar al tamaño de los polinios; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/3 de largo de la cavidad estigmática. **Nectario** sin pasar el perianto. **Cápsula** elipsoide, 15 x 10 mm, cuello apical corto de 3.5 mm de largo.

Caespitose epiphytic **herb**. **Stems** simple, ancipitose towards apical half. **Leaves** subcoriaceous; sheat tubular, ancipitose, papiraceous; blade narrowly elliptic to lanceolate, shortly acuminate. **Inflorescence** apical, pluriracemose, flowering from the nodes of the main inflorescence in later years, with several racemes at the same time, raceme compact and dense. **Floral bracts** shorter than the ovary, triangular. **Flowers** 20-32 per raceme, simultaneous, resupinate, yellow-orange, column and disc white. **Ovary** terete, unornamented. **Sepals** nearly spreading, obovate, obtuse, mucronate. **Petals** nearly spreading, narrowly oblanceolate, obtuse. **Lip** 3-lobed, base truncate; bicallose, callus laminar; unicarinate, keel prominent; lateral lobes suborbicular, rounded, margin entire; midlobe oblong-subrectangular, apex bilobed. **Column** slightly arcute, obconic. **Clinandrium** reduced, entire. **Anther** obovoid, 4-celled. **Pollinia** 4, obovoid, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** apical, slit. **Nectary** not penetrating beyond the perianth. **Capsule** ellipsoid, with an apical neck.

DISTRIBUTION AND ECOLOGY: Known only from the nothern Gulf of México slope (Veracruz and Oaxaca) growing epiphytically in wide-leaved forest and tropical rain forest, from (580)1300 to 1700 m altitude. Flowering from May to September.

OTHER SPECIMENS: MÉXICO: Veracruz: Carretera Xalapa-Mizantla, 31 km adelante de Chiconquiaco, *Aguirre-Olavarrieta 1267 & Salazar* AMOx2! Catemaco, Parque de la Flora y Fauna Silvestre Tropical, *Carmona-Díaz 152* AMO! Mpio. Orizaba, Cerro San Cristóbal, *Salazar 4729, Bustos, Huerta & Arguijo* AMO! Mpio. San Andrés Tuxtla, Volcán San Martín Tuxtla, *Diggs 2659, Nee & Schatz* NY! XAL! Volcán San Martín, *Nevling 2474 & Gómez-Pompa* AMES! Mpio. Soteapan, en uno de los picos del Volcán Santa Marta, *Cházaro 3560 & Padilla* WIS! Volcán de Santa Marta, *Dressler sub Hágsater 6186* AMO! AMES! MEXU! SEL! XAL! Idem. *Dressler sub E. Hágsater 6191* AMOx8! **Oaxaca:** Mixe, cultivada en Huayapam, *Suárez s.n. sub Hágsater 11799* AMO! Idem. *Suárez 1060 sub Hágsater 11808* AMO!

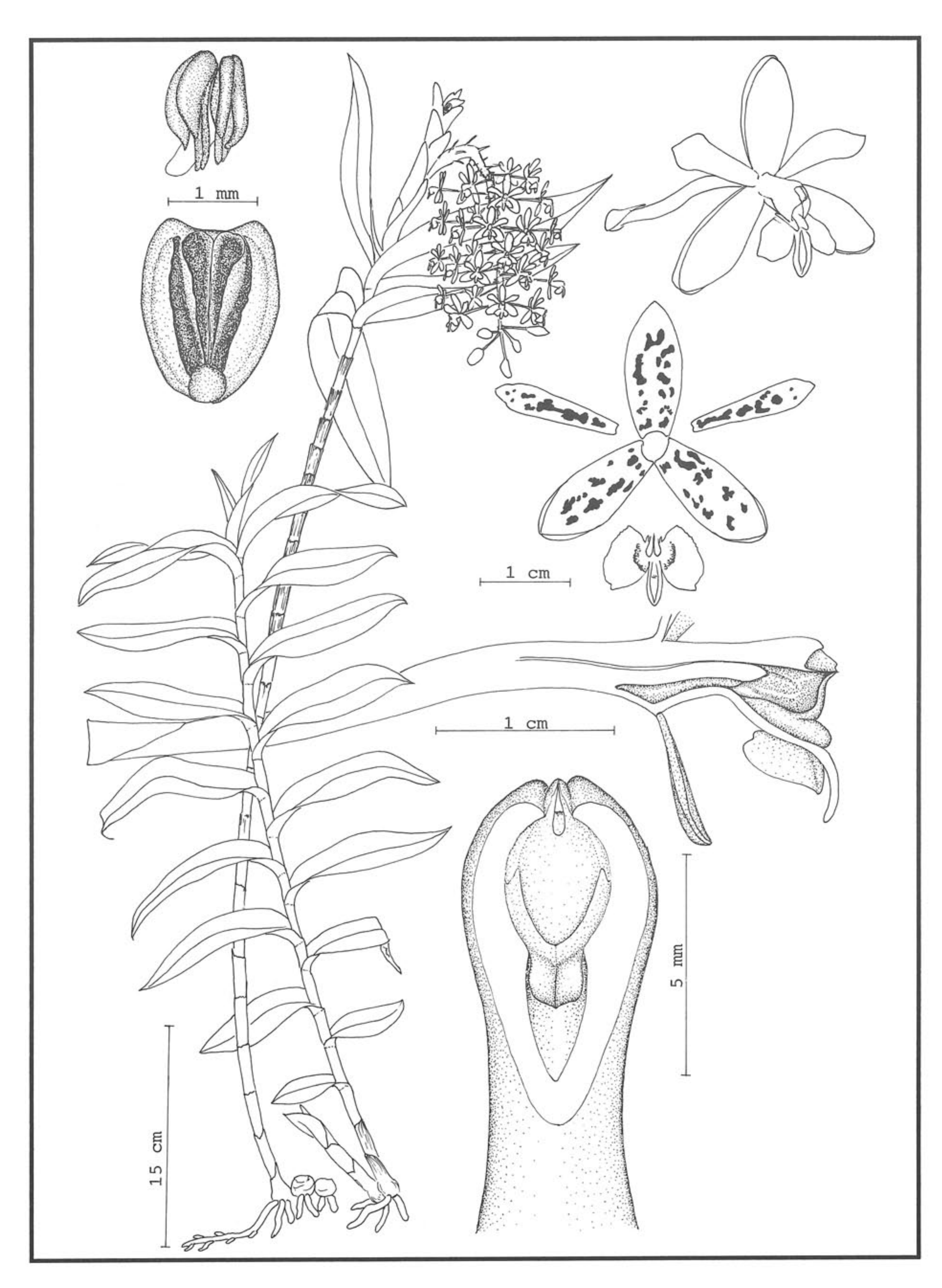
RECOGNITION: *Epidendrum tuxtlense* belongs to the *Epidendrum polyanthum* group and is recognized by its stems, ancipitose towards their apical half, compact and dense racemes, smaller flowers, with seminal fragrance. Similar to *E. polyanthum* which has terete stems, elongate and lax racemes, larger flowers, lateral lobes of the lip with a small sinus in the margin. *Epidendrum stallforthianum* Kraenzl. has an elongate and lax raceme, longer and brownish flowers, a disagreeable fragrance, lateral lobes of the lip semiovate.

1

CONSERVATIONS STATUS: DD (data deficient).

ETIMOLOGY: In reference to the region of San Andrés Tuxtla, where the species has been collected several times.

Authors: E. Hágsater, J. García-Cruz & L. Sánchez Illustrator: R. Jiménez M. Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz
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EPIDENDRUM TZISCAOËNSE Hágsater

Plate 391

EPIDENDRUM TZISCAOËNSE Hágsater, *sp. nov.*

Holotype: MÉXICO: Chiapas: km 11, Tziscao-Bonampak, col. 1 Mar. 1976, pressed 26 Apr. 1980, ***W. & B. Thurston sub E. Hágsater 4306*** AMO! (illustration voucher). Clonotypes: 7 Apr. 1983 AMES! AMO! MEXU! 10 May 1986 F! SEL! 20 May 1988 K! NY! 3 May 1992 XAL! 12 Apr. 1998 G! UVAL!

Epidendro cnemidophoro Rchb. f. simile sed inflorescentia compacta, floribus pallide viridibus, sepalis petalisque maculis magnis rubro-purpureis notatis, columna labelloque albo e purpureo suffulto, labello lobulo medio parvo integro instructo.

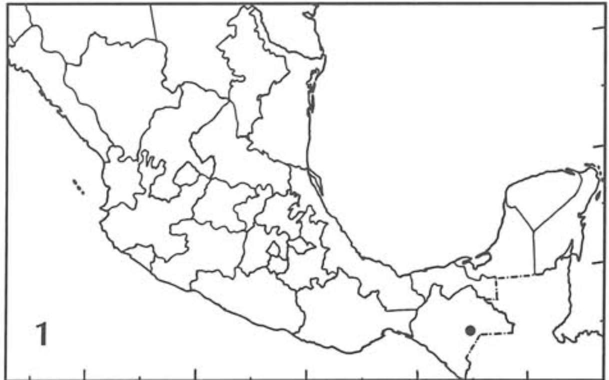
Hierba terrestre, cespitosa, 60-105 cm de alto. **Tallos** sencillos, tipo caña, teretes, rectos, 55-100 x 0.6-1.1 cm. **Hojas** numerosas, distribuidas a lo largo del tallo, en tallos viejos las basales frecuentemente ausentes, coriáceas; vaina tubular, lisa, 2-5 cm de largo; lámina lanceolada, aguda, margen entero, lisa, con una quilla dorsal, verde, 17-21 x 3.6-5.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro de 3-4 años de edad, racemosa, plurianual, arqueada, 8-20 cm de largo; brácteas del pedúnculo 5-7, conduplicadas, imbricadas, redondeadas, obtusas, 7-11 x 0.9-1.5 cm; raquis terete, largo, 4.5-17 cm de largo. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, 5-14 x 3-6 mm. **Flores** 12-44, resupinadas, simultáneas, verde pálidas con manchas rojizo-morado sobre los sépalos vagamente en dos rayas longitudinales, pétalos, columna y labelo blancos, columna difuminada de morado a los lados del ápice, labelo difuminado del mismo color alrededor del disco, el ápice del lóbulo medio verdoso, secan en negro, fragancia diurna, floral, débil, a limón, vainilla y canela, misma que continúa al anochecer pero más débil. **Ovario** terete, ligeramente dilatado detrás del perianto, 18-44 x 2-3 mm. **Sépalos** algo extendidos, libres, elíptico-obovados, obtusos, sin quilla dorsal, muy carnosos, margen extendido, 5-nervados, 14-18 x 6-8 mm. **Pétalos** extendidos, angostamente oblanceolados, obtusos, carnosos, margen extendido, 3-nervados, 15-16 x 3.5-5 mm. **Labelo** unido a la columna, trilobado, 7-10 x 9.5-12 mm; bicalloso, los callos laminares extendiéndose hasta la mitad del disco; unicarinado, la carina pequeña y roma al centro del lóbulo medio; lóbulos laterales semiovados, el margen eroso hacia la base; lóbulo medio angostamente elíptico, agudo, margen entero. **Columna** recta, gruesa, 9-11 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, semiovoides, alargados, agudos, fuertemente comprimidos lateralmente sin ser ancipitosos ni transparentes, los interiores algo más pequeños; caudículas suaves y lisas, algo más largas que los polinios; viscidio semilíquido. **Rostelo** hendido, apical. **Lóbulos laterales del estigma** ca. de 1/4 del largo de la cavidad estigmática. **Nectario** apenas sobrepasando el perianto, no ornamentado. **Cápsula** elipsoide, 60 x 17 mm, pedicelo de 25 mm, cuerpo 30 x 17 mm, cuello apical de 10 mm.

Terrestrial, caespitose, **herb**. **Stems** terete, simple, reed-like. **Leaves** lanceolate, acute. **Inflorescence** apical, from the mature stem, racemose, producing new racemes in successive years from the internodes of the peduncle; peduncle subtended by 5-7, long, imbricating, conduplicate, rounded bracts. **Floral bracts** up to about 1/3 the length of the ovary, ovate, acute, usually much shorter. **Flowers** 12-44, resupinate, simultaneous, sepals and petals pale green with reddish-purple spots, column and lip white, the column tinged at the apex with pale purple, the lip tinged around the disc, the apex of the mid-lobe greenish, flowers dry black, weak daytime fragrance of lemon, vanilla and cinnamon. **Sepals** somewhat spreading, free, fleshy, elliptic-obovate, obtuse, 5-veined. **Petals** spreading, narrowly oblanceolate, obtuse, 3-veined. **Lip** 3-lobed; bicallose, the lamellate callus extending to the middle of the disc; with a low, rounded keel running down the midlobe; lateral lobes semiovate, margin somewhat erose at the base; midlobe narrowly elliptic, acute. **Column** straight, thick. **Clinandrium** reduced, entire. **Anther** ovoid, 4-celled. **Nectary** barely penetrating behind the perianth. **Capsule** ellipsoid, beaked and with a long pedicel.

OTHER SPECIMENS: MEXICO: Chiapas: *Soto 4521, Hérnandez & Yáñez* AMO!

DISTRIBUTION AND ECOLOGY: Known only from the area around Tziscao, in humid jungle at about 1300 m. To be expected in the neighboring areas of Guatemala. Flowering in April-May.

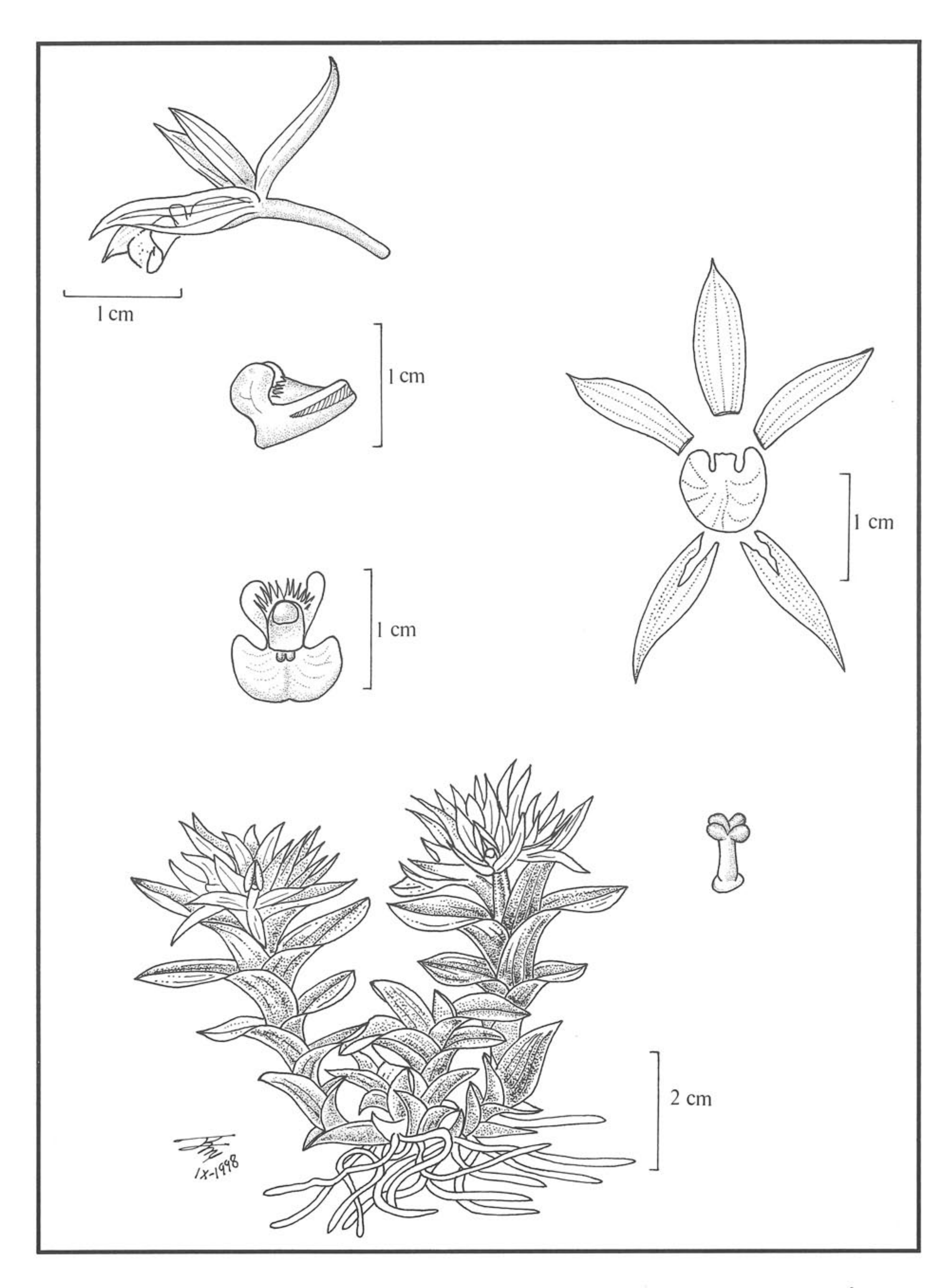
RECOGNITION: *Epidendrum tziscaoënse* belongs to the *E. cristatum* Ruiz & Pav. group and is recognized by the large caespitose plant, many-leaved, terete stems with lanceolate, acute leaves, the 5-7 long, conduplicate, imbricating sheaths, the apex rounded, with a short, compact, nutant raceme of pale green flowers, the sepals and petals marked with large spots of reddish-purple, the column and lip white lightly tinged with purple and the lip with a small, entire midlobe. As herbarium specimens, the flowers dry black, the species is identified by the very short, compact racemes, the flowers with entire lobes of the lip. It has approximately the same color as *E. raniferum* Lindl., but this species has the lateral lobes of the lip deeply lacerate and the midlobe bifid. In shape the flowers are very similar to *E. cnemidophorum* which has yellow sepals and petals spotted with reddish-brown, and the column and lip are rose-magenta, the callus white, the midlobe of the lip is widened at the apex to short-bifid, blunt lobes, flowers are usually larger, sepals being (15)18-23 mm long. *Epidendrum pfavii* Rolfe has clear magenta flowers with the disc white, entire lateral lobes and a bifid midlobe, floral bracts are long-acuminate.



CONSERVATION STATUS: DD (data deficient). Apparently very rare.

ETYMOLOGY: In reference to the village of Tziscao, near the National Park of Montebello, Chiapas.

Authors: E. Hágsater **Illustrator: E Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM ULEINANODES Hágsater

Plate 392

EPIDENDRUM ULEINANODES Hágsater, *sp. nov.*

Holotype: BRAZIL: Amazonas: Manaos, Río Negro, 7 Jan. 1900, ***E. Ule 5276*** SP! (ex MG 5248, illustration voucher).

Epidendro neodiscolori Hágsater simile sed floribus quatour simultaneis, columna alis duabus prominentibus ad apicis latera et clinandrio profunde fimbriato.

Hierba epífita, cespitosa, 6 cm de alto. **Raíces** basales, delgadas. **Tallos** sencillos, erectos, tipo caña, flexuosos, los tallos nuevos producidos de la base del tallo anterior, 3-7 x 0.2-0-3 cm. **Hojas** 6-7, distribuidas a lo largo del tallo, suculentas, rígidas, verdes con tintes amoratados en los lados expuestos al sol, persistentes, no articuladas; vaina tubular, las nervaduras visibles en fresco, 0.5-1 cm de largo; lámina lanceolada, aguda, progresivamente más grandes, 1.5-2 x 0.6-0.8 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, compacta; pedúnculo corto. **Brácteas florales** no vistas. **Flores** 4, resupinadas, "moradas, verdosas al interior", fragancia no registrada. **Ovario** triquetro, no inflado, no ornamentado, 3-4 mm de largo. **Sépalo dorsal** glabro, elíptico, acuminado, recurvado, carnoso, 5-nervados, 12.5 x 4 mm. **Sépalos laterales** lanceolados, extendidos, falcados, unidos por el centro a la columna hasta casi la mitad, 14 x 3.5 mm. **Pétalos** entreabiertos, oblongo elípticos, acuminados, oblicuos, 5-nervados, 12 x 3.5 mm. **Labelo** unido a la columna, entero, reniforme, cordado, redondeado, carnoso, ápice incurvado, cóncavo, margen revoluto, 6.5 x 8.7mm; ecalloso. **Columna** recta, corta, gruesa, con dos alas laterales, prominentes en el ápice, recurvados, 10 mm de largo. **Clinandrio** prominente, profundamente fimbriado. **Cápsula** no vista.

Caespitose epiphytic **herb. Stems** erect, cane-like, flexuous, from the base of the previous stem. **Leaves** succulent, rigid, non-articulate, persistent; sheath tubular; blade lanceolate, acute. **Inflorescence** apical, compact. **Flowers** 4, simultaneous, resupinate, "purple, inside greenish". **Ovary** 3-winged. **Sepals** elliptic to lanceolate, acuminate, fleshy, 5-veined; the **laterals** united to the column. **Petals** oblong elliptic, acuminate, oblique, 5-veined. **Lip** entire, reniform, cordate, rounded, fleshy, margin revolute; ecallose. **Column** straight, short, thick, with a prominent recurved wing on each side. **Clinandrium** prominent, deeply fimbriate.

DISTRIBUTION AND ECOLOGY: Known only from the type locality, along the Río Negro, in the Amazon river system of northern Brazil. Flowering in July.

RECOGNITION: *Epidendrum uleinanodes* is closely related to *Epidendrum schlechterianum* Ames, and is distinguished by its smaller flowers, prominently winged column and the deeply fimbriate clinandrium. *Epidendrum neodiscolor* (*E. discolor* (Lindl.) Benth. non *E. discolor* A. Rich. & Galeotti), the more widely-spread species from Brazil to Venezuela, has smaller flowers, the sepals 8-10 mm long, and the column does not have the prominent column wings or prominently fimbriate clinandrium. *Epidendrum oxynanodes* Hágsater has larger flowers, the sepals being some 2 cm long, but distinguished by the long acuminate sepals and petals, and the column not winged, the clinandrium entire. *Epidendrum schlechterianum* has oblong, acute sepals and petals. Other species in this group such as *E. gonzalez-tamayoi* Hágsater, *E. congestum* Rolfe, *E. congestoides* Ames & C. Schweinf. and *E. longirepens* (C. Schweinf.) C. Schweinf., all have smaller flowers, the sepals being less than 12 mm long, none have the prominent wings at the apex of the column. *Epidendrum medusae* (Rchb. f.) Pfitzer has much large flowers with a prominent fimbriate lip.

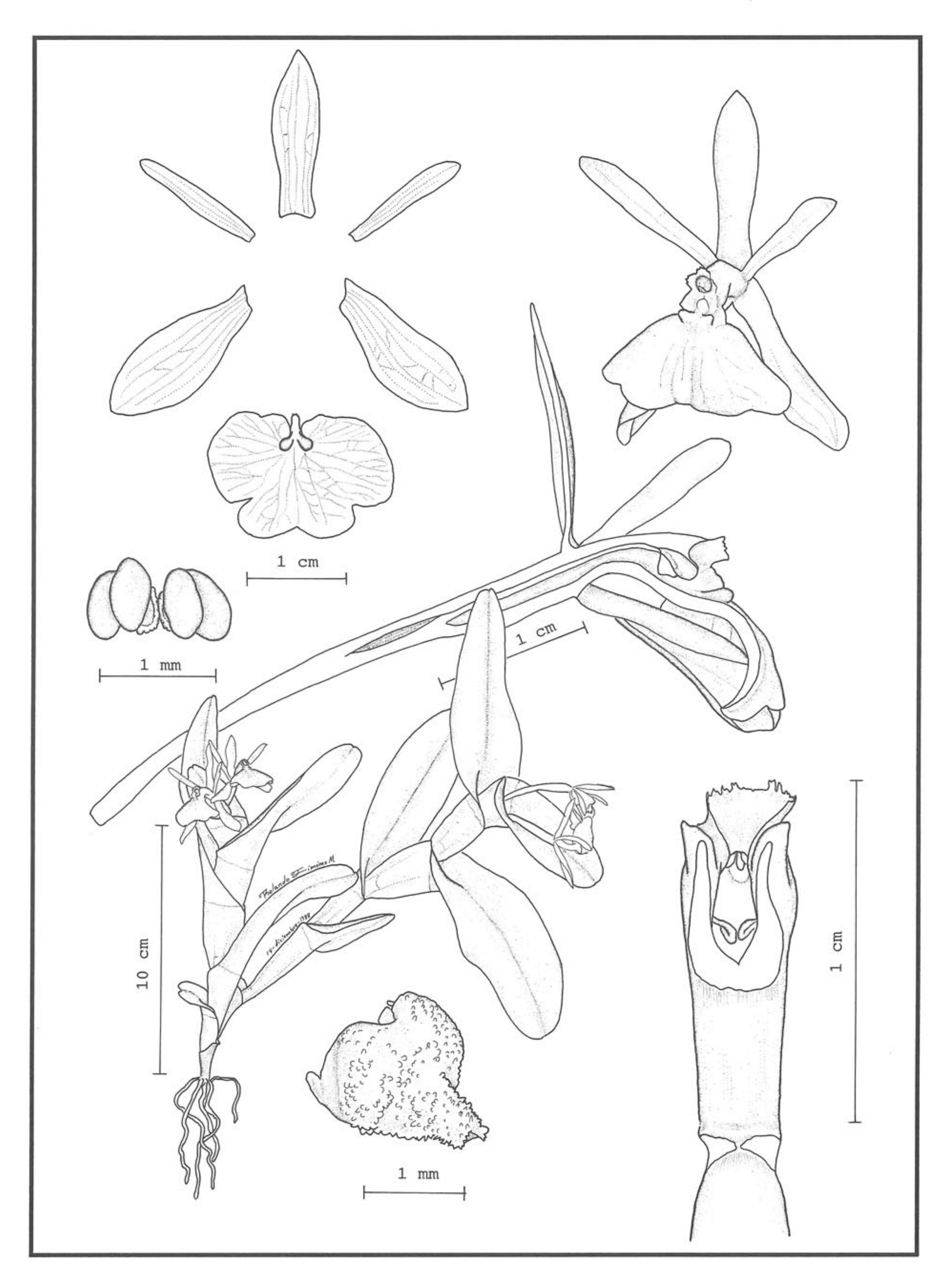
CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of E. Ule, the collector of the type, and *Nanodes*, the name proposed by Lindley as a new genus for the group of species to which this species belongs.

NOTE: The description and illustration are based on the illustration published by Hoehne in **Iconografía de Orchidáceas do Brasil**, 1949. Tab. No. 115, Fig, I.



Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM UPANODIFFORME Hágsater & Dodson Plate 393

EPIDENDRUM UPANODIFFORME Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Morona-Santiago: Pedregal Río Upano, unos 11 km río arriba de Macas hacia Puyo, 1050 m, col. 23 Nov. 1988, ***E. Hágsater 9671, C. H. Dodson, N. H. Williams, M. Whitten & F. G. Thompson*** QCNE! Isotype: AMO! Clonotypes: 18 Dec. 1988 AMO! (in spirit), 29 Dec. 1988 AMO! (illustration voucher), 27 Apr. 1991 AMES! 17 May 1991 MO! 31 May 1991 RPSC! 7 June 1991 SEL!

Epidendro difformi Jacq. simile sed caulibus lateraliter compressis non ancipitibus, ovario ventraliter inflato in tertia parte apicalli, lobulis lateralibus labelli semiovatis, lobulo medio emarginato duos lobulos semicirculares margine integro facienti.

Hierba epífita, cespitosa, 14-60 cm de alto. **Raíces** basales, carnosas, delgadas, 1-1.8 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, 10-22 x 0.2-2.3 cm. **Hojas** 4-8, equidistantes a lo largo del tallo; vaina infundibuliforme, ancipitosa, lisa, 2-4 cm de largo; lámina elíptica, asimétricamente bilobada, margen entero, lisa, subcoriácea, carina dorsal baja, verde, 4-10 x 1.2-4 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, subcorimbosa. **Brácteas florales** mucho más cortas que el ovario, ovadas, agudas, 5-7 x 4-6 mm. **Flores** 2-3, resupinadas, simultáneas, verde claro, fragancia no detectada. **Ovario** terete, no ornamentado, inflado ventralmente en el tercio apical, 25-35 x 1.5-3 mm. **Sépalos** extendidos, glabros, libres, subcoriáceos, obovados, obtusos, margen ligeramente revoluto, 5-nervados, 15-20 x 5-7 mm; los **laterales** oblicuos. **Pétalos** extendidos, linear-obovados, redondeados, margen entero, membranáceos, 3-nervados, 15-18 x 1.5-2 mm. **Labelo** unido a la columna, cordado en la base, trilobado, 10-13 x 14-19 mm; bicalloso, los callos pequeños, subglobosos; lóbulos laterales sin sobrepasar al lóbulo medio, semiovados, enteros; lóbulo medio emarginado, formando dos lóbulos semicirculares, enteros. **Columna** arqueada, delgada, 8-10 mm de largo. **Clinandrio** prominente, eroso-dentado, cónico. **Antera** semicónica, provista de una punta recta, carnosa, prominente en el ápice, papilosa, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos; caudículas más cortas que los polinios, suaves y granulosas; viscidio semilíquido, transparente. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 2/3 del largo de la cavidad estigmática. **Nectario** penetrando 1/3 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** simple, reed-like, laterally compressed, erect. **Leaves** 4-8; sheath infundibuliform; blade elliptic, apex bilobed, green. **Inflorescence** apical, subcorymbose. **Floral bracts** shorter than the ovary, ovate, acute. **Flowers** 2-3, resupinate, simultaneous, green. **Ovary** inflated at the apical third, terete. **Sepals** spreading, glabrous, free, subcoriaceous, obovate, obtuse, margin somewhat revolute, 5-veined; the **laterals** oblique. **Petals** spreading, linear-obovate, rounded, entire, membranaceous, 3-veined. **Lip** adnate to the column, cordiform, 3-lobed; bicallose, the callus subglobose, small; lateral lobes semiovate, entire; midlobe emarginate, forming two semicircular, entire lobes. **Column** arcuate. **Clinandrium** prominent, erose-dentate. **Anther** with a prominent semiconical beak in front, 4-celled. **Rostellum** apical, slit. **Nectary** penetrating 1/3 of the ovary, unornamented.

OTHER SPECIMENS: ECUADOR: Morona-Santiago: Cola de San Pablo, *C. & P. Dodson 12868* SEL! Pedregal Río Upano, unos 11 km río arriba de Macas hacia Puyo, *Hágsater 9675, Dodson, Williams, Whitten & Thompson* AMO! AAU! F! MO! P! S! Camino Patuca-Méndez-Limón-Gualacéo a Plan de Milagro, km 61 desde Gualacéo, *Hágsater 9727 & Dodson* AMO! **Pastaza:** Mera, *Harling 10187, G. & B. Strom* AMES! GB! Motolo, road Mera-Puyo, *Lugo 699* GB! **Tunguragua:** Río Topo, Baños-Puyo, *Hirtz 344* SEL! Río Negro, Baños-Puyo, *Hirzt 968* SEL! Baños-Puyo, Río Topo, *Hirtz 1387* AMO! **Zamora-Chinchipe:** Km 40-51, Loja to Zamora, River Zamora, *Dodson 176* SEL!

DISTRIBUTION AND ECOLOGY: Know only from Ecuador, epiphytic, along the lower eastern slope of the Andes at 1050 to 1600 m altitude.

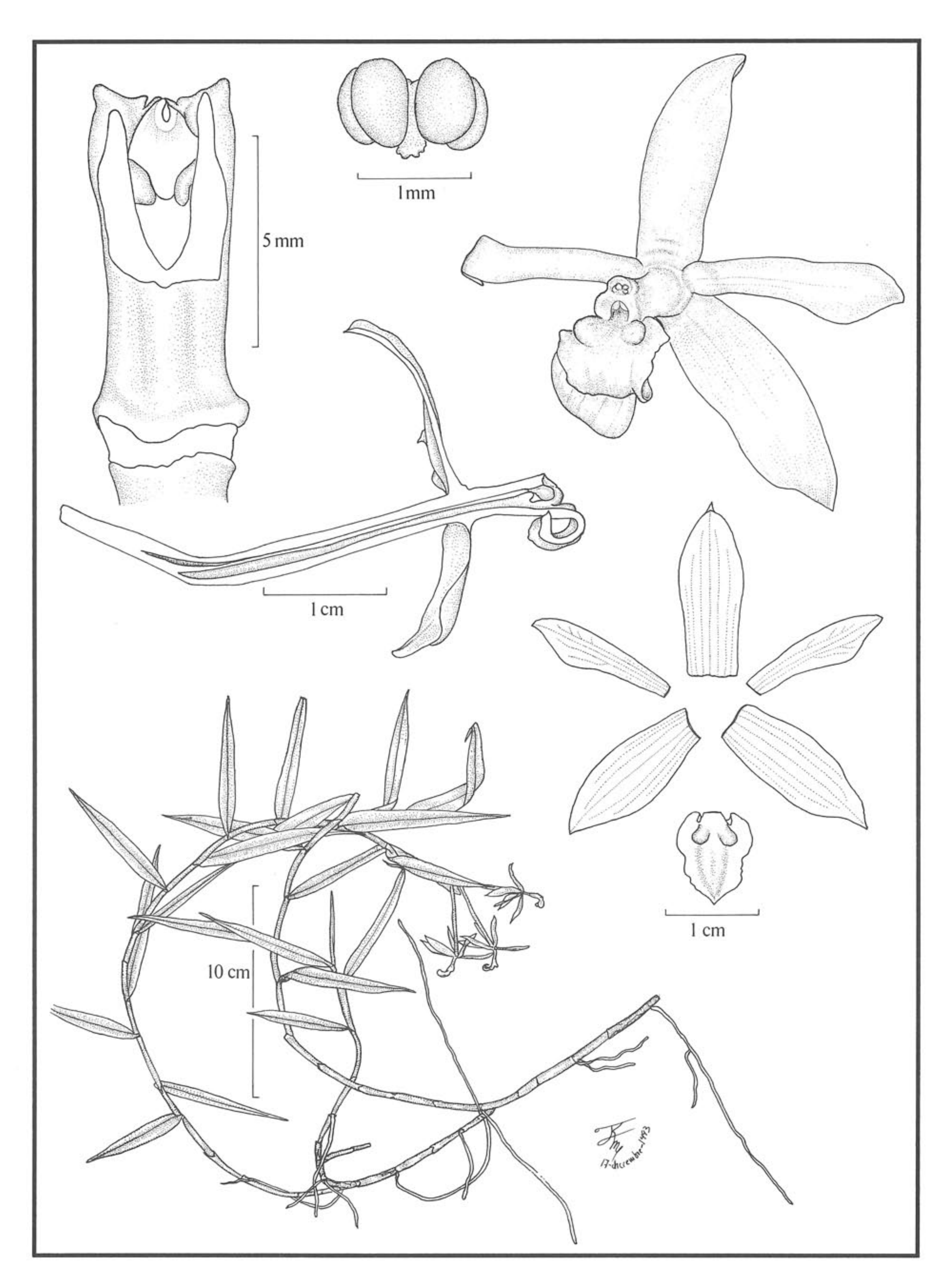
RECOGNITION: *Epidendrum upanodifforme* belongs to the *Epidendrum difforme* group, and is recognized by the 3-lobed lip, semiovate, entire lateral lobes, emarginate midlobe, forming two semicircular, entire lobes. It is closely related to *E. difforme* which has ancipitose stems, not inflated ovary, elliptic to suborbicular lateral lobes, subquadrate middlobe. *Epidendrum microcephalum* Hágsater & L. Sánchez which has smaller flowers, long vegetative form, very small middlobe of the lip. *Epidendrum schoorelii* Christenson, which has entire lip, stright column. *Epidendrum sillarense* Christenson, from Bolivia, but this species has entire lip, emarginate apex and winged column.

4

CONSERVATION STATUS: DD (data deficient). The area where this species grows has been heavily deforested.

ETIMOLOGY: The name *upanodifforme* refers to the Pedregal Río Upano where the type was collected and the *E. difforme* group to which it belongs.

Authors: E. Hágsater & C. H. Dodson **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM URRAOËNSE Hágsater

Plate 394

EPIDENDRUM URRAOËNSE Hágsater, *sp. nov.*

Holotype: COLOMBIA**:** Antioquia: Municipio de Urrao, Carretera entre Urrao y Carmen de Atrato, 2440 m, 14 Aug. 1993, ***R. Escobar et al. 5352*** AMO! (illustration voucher).

Epidendro maderoi Schltr. simile sed floribus albido-roseis et ovario longiore.

Hierba epífita, rastrera, más de 60 cm de alto. **Raíces** filiformes, generalmente de cada nudo de la parte rastrera del tallo, 1 mm de grosor. **Tallos** rastreros en la base, arqueándose hasta ser erectos, producidos del 3-4º entrenudo del tallo anterior, de manera que se producen a los 6-10 cm de la base del tallo anterior, ligeramente flexuosos, lateralmente comprimidos, 46-60 x 0.3-0.45 cm. **Hojas** 12-14, distribuidas a todo lo largo del tallo, equidistantes, subcoriáceas; vaina tubular, ligeramente carinada, estriada en seco, 13-40 x 4.5 mm; lámina articulada, angostamente lanceolada, acuminada, subcoriácea, 50-90 x 7-15 mm. **Espata** tubular, conduplicada, aguda, 47-52 x 5-7 mm. **Inflorescencia** apical, del crecimiento maduro, racemosa, erecta, 8 cm de largo; pedúnculo casi totalmente cubierto por la espata, 35 mm de largo. **Brácteas florales** mucho más cortas que el ovario, triangulares, acuminadas, 2-6 x 1-2 mm. **Flores** 3-4, simultáneas, resupinadas, rosadas con reflejos cristalinos, el labelo y columna blancos. **Ovario** grueso, inflado ventralmente en sus 2/3 apicales, arqueado en el tercio basal, rosado, 35-37 x 2-3 mm. **Sépalos** extendidos, elíptico-obovados, agudos a obtusos, ligeramente mucronados, 5-7-nervados, con nervaduras secundarias entre las principales, 17-18 x 5.5-7 mm. **Pétalos** extendidos, ligulado-oblanceolados, obtusos, 3-nervados, las nervaduras laterales ramificadas arriba de la mitad, 16 x 3-5 mm. **Labelo** unido a la columna, entero, cordiforme-obpandurado, agudo a redondeado, fuertemente revoluto en posición natural, margen irregularmente eroso, carnoso, 7.5-10 x 6.5-8 mm; bicalloso, callos globosos; sin carinas. **Columna** recta, obcónica, 8-9 mm. **Clinandrio** reducido, entero. **Antera** semiorbicular, no ornamentada, 4-locular. **Polinios** 4, lenticulares, subiguales; caudículas granulosas, ligeramente más grandes que los polinios; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** prominentes, de la mitad del largo de la cavidad estigmática. **Nectario** penetrando 2/3 del ovario, dilatado en el fondo, donde se arquea el ovario, no ornamentado. **Cápsula** no vista.

Repent epiphyte. **Stems** produced from the 3-4th internode of the previous stem, the basal portion creeping, then erect, straight. **Leaves** articulate, narrowly lanceolate. **Spathe** tubular, conduplicate, acute. **Inflorescence** apical, racemose, erect. **Floral bracts** triangular, acuminate, shorter than the ovary. **Flowers** 3-4, simultaneous, resupinate, pink, the lip and column white. **Ovary** inflated on the underside along the apical 2/3, arched at the first third. **Sepals** elliptic-obovate, acute to obtuse, 5-7-veined. **Petals** ligulate-oblanceolate, obtuse, 3-veined. **Lip** entire, cordiform-obpandurate, strongly revolute in natural position, margins erose, apex acute to rounded, fleshy; bicallose. **Column** straight. **Clinandrium** reduced, entire. **Anther** semiorbicular, unornamented. **Nectary** penetrating 2/3 of the ovary, dilated at the end, where the ovary arches.

OTHER SPECIMENS: COLOMBIA: Antioquia: Carmen de Atrato, hort. at Colomborquídeas, *Hágsater 11551* COL!

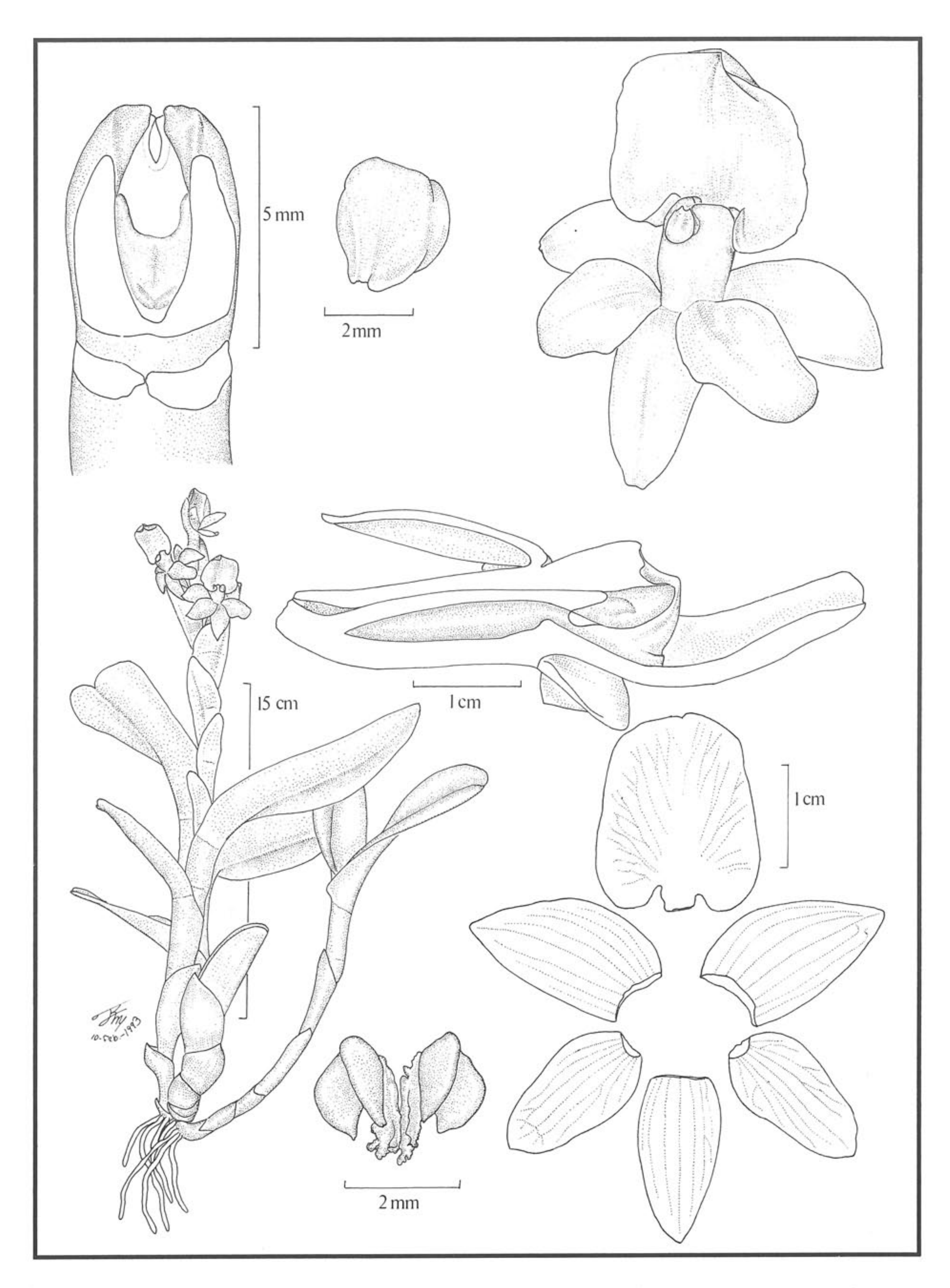
RECOGNITION: *Epidendrum urraoënse* is recognized by the repent habit, the many-leaved stem with narrowly lanceolate leaves, few-flowered inflorescence enveloped in a tubular, conduplicate, acute spathe, the cordate, obpandurate lip and the ligulate-oblanceolate petals, the flowers being pink with a white column and lip. It is closely related to *Epidendrum maderoi* from the highlands in Antioquia around Medellín and the eastern cordillera highlands in Cundinamarca which has yellow-green flowers with shorter ovaries. In herbarium specimens they may be at first confused with the *Epidendrum geminiflorum* Kunth group, due to the few, non- resupinate flowers with a spathe, but the many lanceolate leaves are indicative of the *E. maderoi* group.

DISTRIBUTION AND ECOLOGY: Known only from the area between Urrao and Carmen de Atrato. The locality is on the western slopes of the western Cordillera, the Pacific watershed, 2440 m elevation. Flowering in August. (May-June in cultivation in Mexico).



CONSERVATION STATUS: DD (data deficient).

ETIMOLOGY: The specific name is derived from the type locality in northwestern Colombia.



EPIDENDRUM VEXILLIUM Hágsater

Plate 395

EPIDENDRUM VEXILLIUM Hágsater, *sp. nov.*

Holotype: COLOMBIA: Risaralda: Itaurí, 1000 m, pressed 15 Feb. 1993, ***J. A. González sub E. Hágsater 8440*** AMO! (illustration voucher). Clonotypes: 8 Oct. 1993 SEL! 17 Dec. 1996 COL! 17 Dec. 1997 CR! K! MO! PMA! 12 Jan. 1998 AMES! JAUM!

Epidendro circinato Ames simile sed labello erecto in eodem columnae axe locato, labello ad basem latiore, petalis patentibus ovatis 5-7-nervatis.

Hierba epífita, cespitosa, 16-35 cm de alto. **Raíces** basales, carnosas, gruesas, 1.5-2.5 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, ancipitosos hacia el ápice, rectos, 4-21 x 0.8-1.8 cm. **Hojas** 2-4, dísticas, distribuidas hacia la mitad apical del tallo, coriáceas; vaina tubular, lateralmente comprimida, ancipitosa, lisa, 1.5-6 cm de largo; lámina articulada, elíptica, ápice desigualmente bilobado, margen entero, lisa, verde, 7-17 x 3.4-5.1 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, una espiga, florece una sola vez, dística, erecta, flexuosa, 15-18 cm de largo; pedúnculo lateralmente comprimido, ancipitoso, no ornamentado, brácteas del pedúnculo 2-3, subimbricadas, conduplicadas, el ápice incurvado tocando el pedúnculo, 23-28 x 9-15 mm. **Brácteas florales** iguales o más cortas que el ovario, conduplicadas, agudas, quilla dorsal minutamente dentada, 20-25 mm de largo; en las inflorescencias secas, ya sin flores, son extendidas, espaciadas, algo arqueadas hacia adentro. **Flores** 2-6, sucesivas, 2-3 abietas a la vez, no resupinadas, dísticas, abiertas hacia el mismo lado del raquis, de manera que la inflorescencia aparece secundiflora, concoloras, verde manzana, fragancia nocturna seminal a primera nariz, después especiada. **Ovario** inflado en casi toda su longitud, terete, no ornamentado, 20-25 mm de largo. **Sépalos** extendidos, libres, quilla dorsal incipiente, apical en los laterales, glabros, suculentos. **Sépalo dorsal** ovado, obtuso, margen extendido, 5-nervado, 12-19 x 5-9 mm. **Sépalos laterales** ovados, obtusos, oblicuos, margen extendido, 7-nervados, 15-19 x 8-11 mm. **Pétalos** extendidos, ovados, obtusos a redondeados, margen extendido, suculentos, 5-7-nervados, 11-18 x 4-8.5 mm. **Labelo** unido a la columna, casi plano en posición natural, entero, subrectangular, cordado en la base, truncado en el ápice, recto, margen entero, 11-20 x 14-22 mm; ecalloso; sin carinas. **Columna** recta, gruesa, 9-10 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoideos, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, poco más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** penetrando 3/4 del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Stems** simple, laterally compressed, ancipitose, erect. **Leaves** 2-4, distichous, elliptic, apex bilobed, coriaceous. **Inflorescence** apical from mature growth, a spike, erect, laterally compressed, ancipitous. **Floral bracts** about as long as or shorter than the ovary, conduplicate, acute, arched inward, apical keel minutely dentate. **Flowers** 2-6, successive, 2-3 open at one time, non resupinate, distichous and opening toward the same side of the rachis, concolor, apple-green, fragrance seminal-spicy. **Ovary** inflated nearly full length, unornamented. **Sepals** ovate, slightly dorsally keeled apically, 5-7-veined. **Petals** ovate, obtuse, 5-7-veined. **Lip** entire, nearly flat in natural position, subrectangular, cordate at the base, apex truncate; ecallose; without any keel. **Column** straight, stout. **Clinandrium** reduced, entire.

OTHER SPECIMENS: PANAMA: Panama: El Llano-Cartí road, *Dressler 5522* AMO! SEL!

OTHER RECORDS: COLOMBIA: *Valdivieso 1041* AMO (illustration, xerox)! **Chocó:** Bahía Solano, *Misas 280* AMO (illustration, xerox)! **PANAMA:** *Taylor 27* AMO (slide)! K (illustration)!

DISTRIBUTION AND ECOLOGY: Colombia and Panama, recorded from the lowlands on the Pacific slope of the Serranía de San Blas (Panama) and the lowlands in the Chocó (Colombia). (The type was said to have been collected on a field trip between Cali and Medellín in the Department of Risaralda). Flowering October-February.

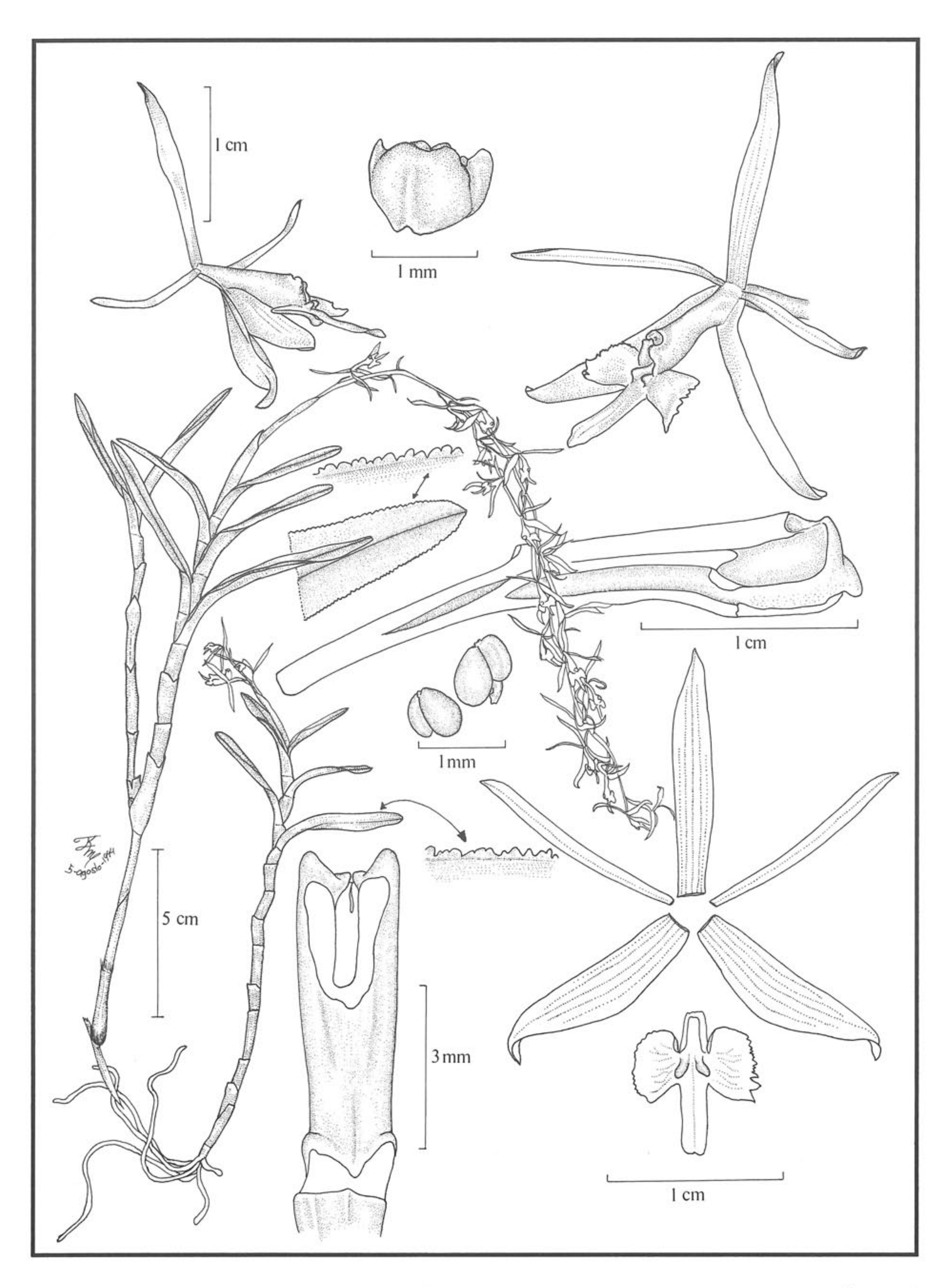


RECOGNITION: *Epidendrum vexillium* is recognized by its broadly ancipitous stems, with 2-4 large, wide, elliptic leaves, the nearly flat, subrectangular to suborbicular lip, somewhat wider near the base than near the apex, upright, extending on the same axis as the column, and the well-spread sepals, which are neither revolute nor reflexed. It belongs to the *Epidendrum coriifolium* Lindl. group and is similar to *E. circinatum* which has an obcuneate lip broader towards the apex than at the base and is inflexed at a 90 degree angle with the axis of the column, so that in natural position the lip is horizontal but looking downwards, covering the entry of the nectary, the sepals and petals are strongly revolute.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: *Vexillium*, Latin, in military terms a military or naval ensign, in relation to the way the lip is positioned to exhibit it.

Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO



EPIDENDRUM VIDAL-SENEGEI Hágsater

Plate 396

EPIDENDRUM VIDAL-SENEGEI Hágsater, *sp. nov.*

Holotype: [ECUADOR or PERU:] Voyage a l'Equateur et au Pérou, 1876-1877, ***M. Vidal-Sénège s.n.*** P! (rec'd 5 déc. 1877; illustration voucher).

Epidendro pergracili Schltr. simile sed habitu majore, labello bicalloso, lobulo medio triangulari.

Hierba simpodial, erecta, ca. 40 cm de alto. **Raíces** basales, carnosas, gruesas, ca. 2-3 mm de grosor. **Tallos** sencillos, tipo caña, lateralmente comprimidos, rectos, el tallo nuevo se origina de un entrenudo intermedio del tallo anterior, 10-17 x 0.4-0.6 cm. **Hojas** ca. 7, distribuidas en la mitad apical del tallo; vaina tubular, ancipitosa, finamente estriada en seco, aparentemente amoratada, hasta de 1.7 cm de largo; lámina angostamente lanceolada, obtusa, margen crenado, subcoriácea, verde, 3-7 x 0.7-0.9 cm. **Espata** 1-2, tubulares, angostas, agudas, ancipitosas, 3-3.5 x 0.3 cm. **Inflorescencia** apical, del crecimiento maduro, racemosa, florece una sola vez, arqueada, 19-24 cm de largo; raquis no ornamentado. **Brácteas florales** más o menos tan largas como el ovario, triangular-acuminadas, 3-8 mm de largo. **Flores** ca. 20, simultáneas, el labelo siempre orientado hacia el eje del pedúnculo, coloración no registrada, fragancia no registrada. **Ovario** terete, no inflado, no ornamentado, 5-7 mm de largo. **Sépalos** extendidos, libres, agudos, margen extendido, glabros, membranáceos, 5-nervados; el **dorsal** angostamente oblongo, 13-16 x 2 mm; los **laterales** angostamente elípticos, oblicuos, quilla dorsal inconspicua, 13-15 x 3 mm. **Pétalos** extendidos, lineares, agudos, margen extendido, membranáceos, 1-nervados, 12-13 x 1 mm. **Labelo** unido a la columna, trilobado, cordado en la base, 7-10 x 7-8 mm; bicalloso, callos lateralmente comprimidos; lóbulos laterales dolabriformes, margen apical irregularmente dentado, 2 x 4 mm; lóbulo medio angostamente rectangular, apíce abruptamente agudo, retuso, 4-6 x 1.5 mm. **Columna** recta, delgada, 7-8 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, desiguales, los interiores más pequeños; caudículas del mismo largo de los polinios, suaves y granulosas; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de 1/4 del largo de la cavidad estigmática. **Nectario** apenas traspasando el perianto, no ornamentado. **Cápsula** no vista.

Roots from the base of the plant, thick. **Stems** simple, cane-like, laterally compressed, the new stem is produced from an intermediate internode of the previous stem. **Leaves** about 7, distributed along the upper half of the stem; sheath tubular, ancipitose, finely striated when dry and apparently purple; blade narrowly lanceolate, obtuse, margin crenulate. **Spathes** 1-2, narrow, acute. **Inflorescence** apical, from the mature stem, racemose, arching, flowers only once. **Floral bracts** more or less as long as the ovary, triangular-acuminate. **Flowers** about 20, the lip always towards the axis of the peduncle. **Ovary** thin, not inflated, terete. **Sepals** spreading, narrowly oblong to elliptic, acute, 5-veined. **Petals** spreading, linear, acute, 1-veined. **Lip** united to the column, 3-lobed, cordate at the base; bicallose; lateral lobes dolabriform, apical margin irregular-dentate; midlobe narrowly rectangular, apex abruptly acute, retuse, 3-4 times longer than broad. **Column** straight, thin. **Clinandrium** reduced, entire. **Nectary** barely penetrating the ovary, unornamented.

DISTRIBUTION AND ECOLOGY: Known only from the type material without any information.

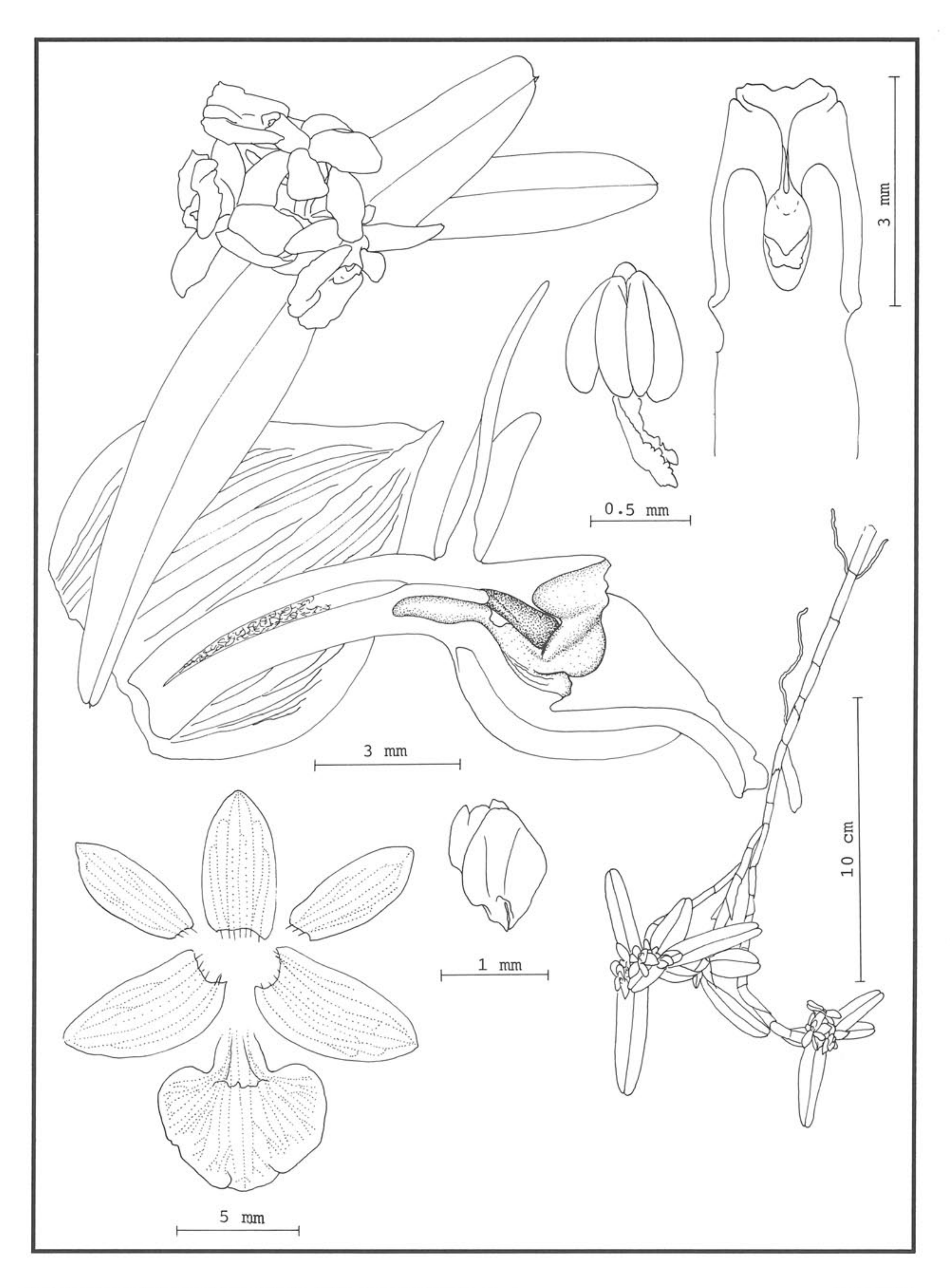
RECOGNITION: *Epidendrum vidal-senegei* is distinguished by the stout stem with wider, crenulate leaves, the bicallose lip and the midlobe narrowly rectangular. It is similar to *Epidendrum pergracile* which has lanceolate, acute leaves with an entire margin, and the lip tricallose and the midlobe triangular.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of the collector M. Vidal-Sénège, who collected in Ecuador and Peru in the late 19th century and deposited his material in Paris.



Authors: E. Hágsater **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM VILLEGASTIGMA Hágsater & García-Cruz

Plate 397

EPIDENDRUM VILLEGASTIGMA Hágsater et García-Cruz, *sp. nov.*

Holotype: COSTA RICA: Alajuela: Caña Chica, entre El Alto de Villegas y Ángeles Norte de San Ramón, 1250-1550 m, col. 10 Mar. 1983, pressed 15 June 1983, ***R. L. Dressler & C. Horich sub E. Hágsater 7144*** AMO! Isotype: CR!

Epidendro penneystigma Hágsater & García-Cruz simile sed floribus minoribus, sepalis petalisque viridulis, labello albo et columna breviore obconica, differt.

Hierba epífita, esencialmente monopodial, ca. 90 cm de alto. **Raíces** basales, carnosas. **Tallos** teretes, tipo caña, ramificados, el principal 0.6-1 cm de grosor, los secundarios 0.2-0.5 cm de grosor. **Hojas** a lo largo del tallo principal, caedizas cuando ramificado, las hojas de las ramas persistentes; vaina tubular, rugosa, papirácea, pardas, en el tallo principal 3-6 cm de largo; lámina elíptico-lanceolada, ápice oblicuamente bilobado, redondeado, las del tallo principal 8-9 x 1.5-2 cm, las de las ramas secundarias y terciarias 2.5-7 x 0.5-1.5 cm. **Espata** ausente. **Inflorescencia** apical, generalmente de las ramificaciones, florece una sola vez, racemosa, erecta a arqueada, 1.5-3 cm de largo; pedúnculo corto, lateralmente aplanado, recto, 0.3-0.6 cm de largo; ocasionalmente parcialmente cubierto por una bráctea, conduplicada, oblongo-ovada, obtusa, 1-1.5 cm de largo; raquis flexuoso. **Brácteas florales** conduplicadas, más largas que el ovario, no imbricadas, anchamente ovadas, agudas, pardas al secar, 8-9 x 6.5-7.5 mm. **Flores** 3, simultáneas, resupinadas, sépalos y pétalos verdosos, labelo blanco, columna blanca, verde en la mitad basal. **Ovario** pedicelado, no ornamentado, cubierto completamente por la bráctea floral, ligeramente arqueado, 6.5-7 mm de largo. **Sépalos** extendidos, elípticos, obtusos, mucronados, 7-nervados, 5.5-6.5 x 2.5-3 mm; **los laterales** ligeramente oblicuos, 6.5-7.5 x 3-3.5 mm. **Pétalos** extendidos, elípticos, obtusos, 5-nervados, 5.5-6.5 x 2-2.5 mm. **Labelo** unido a la columna, entero, ligeramente abrazando a la columna, reniforme, base cordada, margen revoluto en posición natural, 4-5 x 6-7 mm; unicalloso, callo laminar, obscuramente tridentado; ecarinado. **Columna** recta, corta, obcónica, 2.5-3 mm de largo. **Clinandrio** corto, eroso. **Antera** subesférica, 4-locular. **Polinios** 4, angostamente obovoides, lateralmente comprimidos; caudículas suaves, granulosas, mucho más largas que los polinios; viscidio semilíquido. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** cubriendo 2/3 de la cavidad estigmática. **Nectario** penetrando 1/5 parte de la longitud del ovario. **Cápsula** no vista.

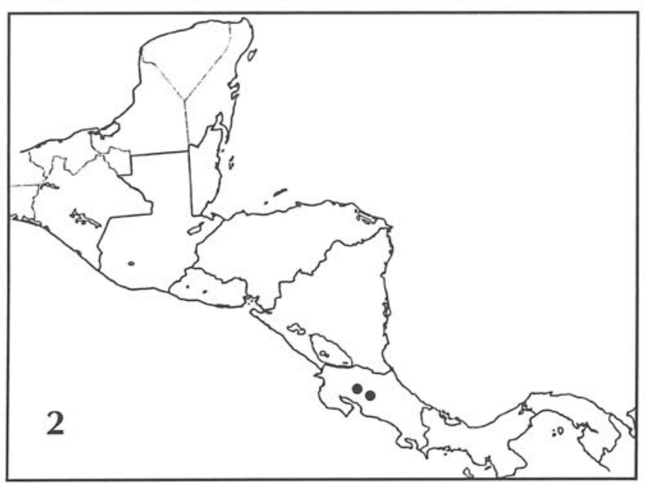
Epiphytic monopodial **herb**. **Stems** branched, terete. **Leaves** elliptic-lanceolate, apex obliquely bilobed, rounded, those of the main stem longer and deciduous, those of the branches smaller and persistent. **Inflorescence** apical, from the branches, racemose, distichous, erect to arcuate. **Floral bracts** conduplicate, longer than the ovary, widely ovate, acute. **Flowers** 3, simultaneous, resupinate, sepals and petals greenish, lip white, column white, basal half green. **Ovary** slightly arcuate. **Sepals** spreading, elliptic, obtuse, mucronate, 7-veined; **the laterals** slightly oblique. **Petals** spreading, elliptic, obtuse, 5-veined. **Lip** entire, reniform, base cordate; unicallose, callus laminar, obscurely tridentate; without keels. **Column** straight, short, obconic. **Clinandrium** short, erose. **Anther** subspherical, 4-celled. **Pollinia** 4, narrowly obovate, laterally compressed; caudicles soft and granulose; viscidium semiliquid. **Rostellum** subapical, slit. **Nectary** penetrating 1/5 of the ovary.

OTHER SPECIMENS: COSTA RICA: Alajuela: Caña Chica, *Dressler & Horich sub Hágsater 7111* AMES! AMO! CR! Idem. *Dressler & Horich sub Hágsater 7147* AMO! CR! SEL! **Puntarenas:** Monteverde Reserve, *Ingram 1477 & Ferrell-Ingram* MO!

DISTRIBUTION AND ECOLOGY: Known from Monteverde Reserve and south of the Cordillera de Tilaran. Epiphyte in cloud forest, from 1250 to 1550 m altitude. Flowering from June to July.

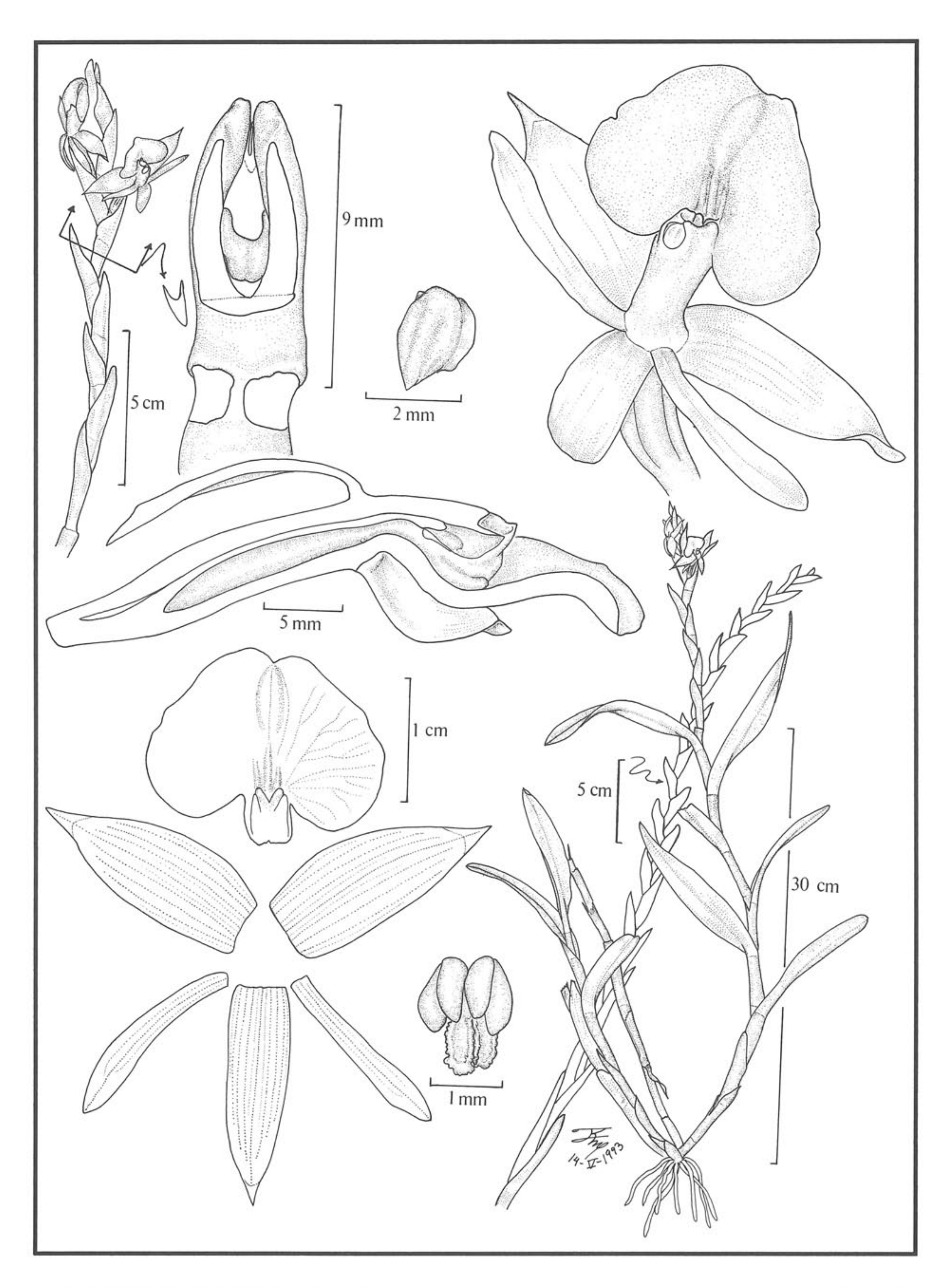
RECOGNITION: *Epidendrum villegastigma* belongs to the *Epidendrum platystigma* Rchb. f. group and is recognized by its smaller leaves, small greenish flowers, white lip, straight, obconic column, and 5.5-7.5 mm long sepals. *Epidendrum penneystigma* has leaves of the main stem 11 cm long, white flowers and 10.5-11.5 mm long sepals. *Epidendrum campbellstigma* Hágsater & García-Cruz has apple green flowers, white lip, ovate, 9-11 mm long sepals and the clinandrium entire. *Epidendrum jefestigma* Hágsater & García-Cruz, has greenish white flowers, 9-13 mm long sepals and a suborbicular lip with a bidentate callus.

CONSERVATION STATUS: DD (data deficient). Known from a protected nature reserve



ETYMOLOGY: In reference to the type locality, Alto de Villegas, and the *E. platystigma* group to which it belongs.

Authors: E. Hágsater & J. García-Cruz **Illustrator: E. Hágsater** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM VILLOTAE Hágsater & Dodson **Plate 398**

EPIDENDRUM VILLOTAE Hágsater *et* Dodson, *sp. nov.*

Holotype: ECUADOR: Esmeraldas: Lita to San Lorenzo km 50, 260 m, 12 May 1990, ***C. H. Dodson 18221, A. Gentry, B. Boyle & D. Rubio*** RPSC! Clonotype: 14 May 1993 (plant later cultivated in Mexico City) ***C. H. Dodson 18221 sub E. Hágsater 10680*** AMO! (spirit, illustration voucher), 31 Aug. 1995 AMO! 16 Dec. 1997 AMES! COL! QCNE!

Epidendro allochrono Hágsater simile sed follis 5-6, angustioribus, bracteis multo longioribus et acutioribus apice acuto et ad rhachidem parallelis.

Hierba epífita, cespitosa, ca. 35-90 cm de alto. **Raíces** basales, carnosas, gruesas, 3 mm de grosor. **Tallos** sencillos, tipo caña, rectos, lateralmente comprimidos, 27-33 x 0.5-0.9 cm. **Hojas** 4-6, dísticas, distribuidas en la mitad apical del tallo, subcoriáceas; vaina tubular, lateralmente comprimida, ancipitosa, estriada, 3-6 cm de largo; lámina articulada, angostamente oblonga, ápice desigualmente bilobado, margen entero algo revoluto, lisa, verde pálido con el margen amoratado, (5)9-20 x 1.2-2.1 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, dística, erecta, flexuosa, ca. (7)50(100) cm de largo; raquis lateralmente comprimido, ancipitoso, no ornamentado; brácteas del pedúnculo hasta 5, semejantes a las florales pero mucho más largas, casi paralelas al pedúnculo, imbricadas, conduplicadas, (19)46-96 x 7-8 mm. **Brácteas florales** más largas que el ovario, ovadas, conduplicadas, agudas, 18-35 mm de largo, se desarrollan progresivamente, después de antesis son extendidas, no imbricadas. **Flores** hasta 60, sucesivas, no resupinadas, desarrollándose y abiertas una o dos a la vez, verde manzana, brácteas algo teñidas de rojizo-morado, fragancia no registrada. **Ovario** grueso, terete, no ornamentado, 12-18 mm de largo. **Sépalos** entreabiertos a más o menos extendidos, el dorsal reflexo, libres, quilla dorsal prominente, glabros, coriáceos. elípticos, aristados, margen extendido, 7-9 nervados, 17.5-18 x 6-9 mm; los **laterales** más anchos. **Pétalos** libres o plegados a los sépalos laterales, oblanceolados, agudos, margen extendido, 3-nervados, 17 x 3 mm. **Labelo** unido a la columna, entero, obreniforme, emarginado y mucronado, margen entero a finamente eroso, 12.5 x 17.5 mm; ecalloso; tricarinado, la carina central gruesa y roma formando el mucrón grueso. **Columna** recta, gruesa, 10 mm de largo. **Clinandrio** reducido, entero. **Antera** ovoide, aguda, con una quilla roma al frente, 4-locular. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales; caudículas suaves y granulosas, más largas que los polinios; viscidio semilíquido, transparente. **Rostelo** subapical, hendido. **Lóbulos laterales del estigma** de color rojo vino intenso, 1/4 del largo de la cavidad estigmática. **Nectario** penetrando 3/4 partes del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose **herb**. **Stems** simple, laterally compressed, erect. **Leaves** 4-6, distichous, narrowly oblong, apex unequally bilobed, subcoriaceous, light green, the margin purple. **Inflorescence** apical from mature growth, racemose, distichous, erect, flexuose; rachis laterally compressed, ancipitose. **Floral bracts** longer than the ovary, conduplicate, acute, not imbricated, except for the basal bracts which are much longer and imbricating. **Flowers** up to 60, successive, developing and open one or two at a time, apple green. **Ovary** thick, terete. **Sepals** elliptic, aristate, dorsally keeled, 7-9-veined. **Petals** oblanceolate, acute, free or adnate to lateral sepals, 3-veined. **Lip** entire, obreniform, emarginate-mucronate, margin entire to finely erose; ecallose. **Column** straight. **Clinandrium** reduced. **Anther** ovate, acute, 4-celled, with a low keel in front. **Pollinia** 4, obovoid, laterally compressed, subequal; caudicles soft and granulose, slightly longer than the pollinia; viscidium semiliquid, transparent. **Rostellum** slit. **Nectary** penetrating 3/4 of the ovary.

OTHER SPECIMENS: COLOMBIA: Valle del Cauca: Río Dagua, mangrove, *Killip 5323* AMES! Alto Calima, *Valdivieso 259 & Restrepo* HPUJ! Hort. Cali, *Villota sub Hágsater 7449* AMO!

DISTRIBUTION AND ECOLOGY: Lowland Pacific in Ecuador and Colombia, in high rain forest and mangroves, from sea level to 250 m altitude. Flowering throughout the year.

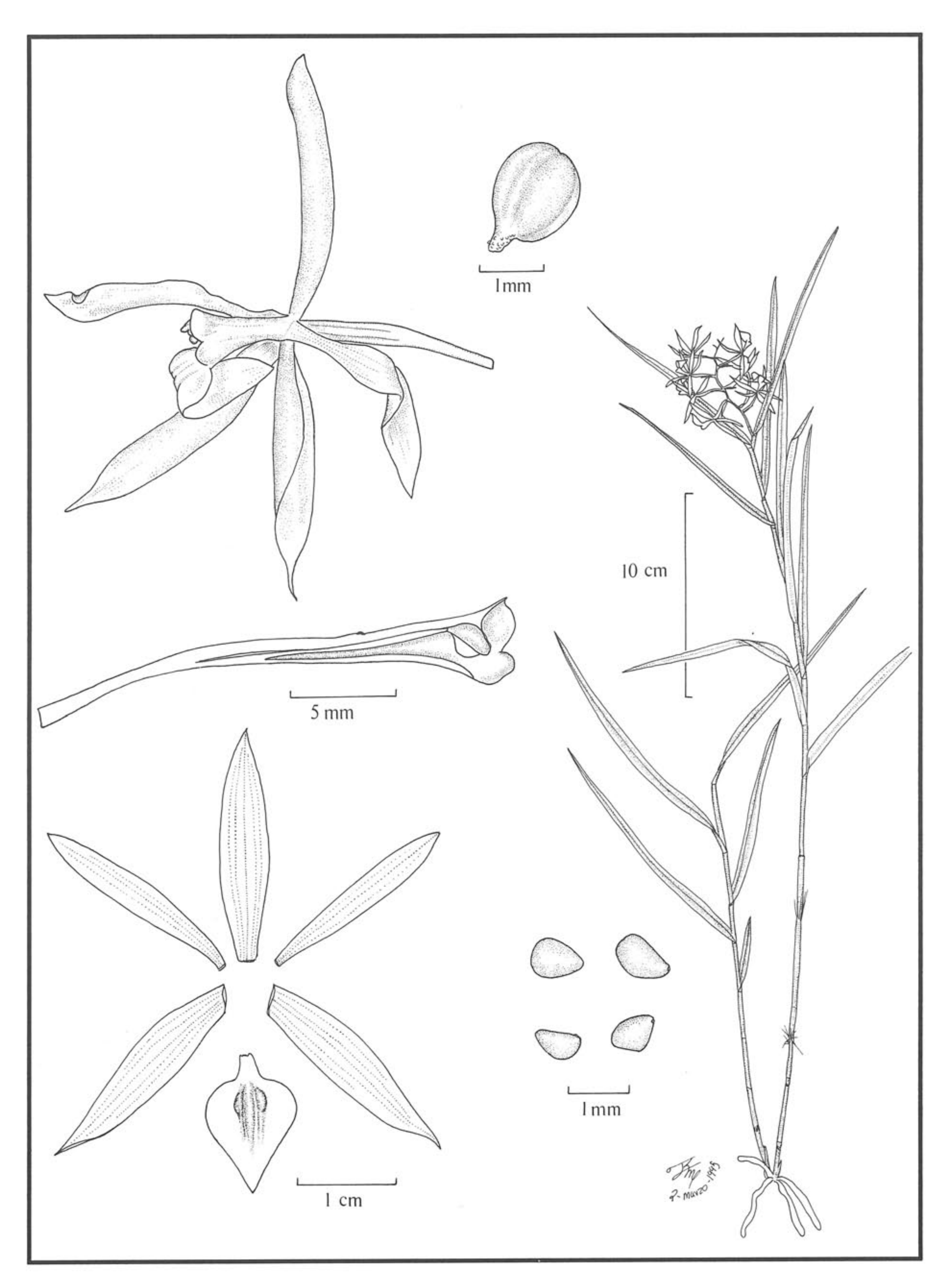


RECOGNITION: The caespitose growth, stems with 4-6 coriaceous, strap-like leaves and especially the erect, distichous, ancipitose inflorescence with open, long acute floral bracts, the apex pointed parallel to the rachis, successive flowers, produced 1-2 at a time, identify this species. It has been confused with *Epidendrum coriifolium* Lindl., a closely related species from Guatemala and Mexico, with short, compact plants, the inflorescence about as long as the leaves and flowers simultaneous. *Epidendrum allochronum* has 2-3(4) leaves which are wider (1.9-3.2 cm), and the floral bracts are rounded and spreading, the apex not pointing inwards. *Epidendrum imitans* Schltr. from the eastern slope of the Andes in Central Ecuador has closely imbricating floral bracts with the apex rounded, several flowers open simultaneously, linear petals and a subtriangular lip.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Nelly Villota, amateur orchid grower of Cali, Colombia, who provided the first plant for cultivation.

Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM WENDTII Hágsater & Salazar

Plate 399

EPIDENDRUM WENDTII Hágsater et Salazar, *sp. nov*.

Holotype: MÉXICO: Oaxaca: Municipio de San Miguel Chimalapa; Cerro Salomón, ca. 2 km en línea recta al NNW del Cerro Guayabitos, ca. 43 km en línea recta al N de San Pedro Tapanatepec, ca. del límite con el municipio de Santa María Chimalapa, parte baja del filo, al S del cerro, 16°45'N 94°11'30"W, 1850 m alt., bosque mesófilo bién desarrollado con *Podocarpus*, *Magnolia*, *Alfaroa*, *Quercus*, suelos profundos y ricos, epífita, flor verde claro, 23 Dec. 1985, ***T. Wendt 5157, S. Maya M. Ishiki & K. Collins*** AMO! Isotypes: AMES! CHAPA! [7 specimens prepared, final deposit of remaining 4 not known].

Epidendro chloe Rchb. f. simile sed floribus usque ad duplo majoribus, labello ad basem valde recurvo ovato longiore quam latiore.

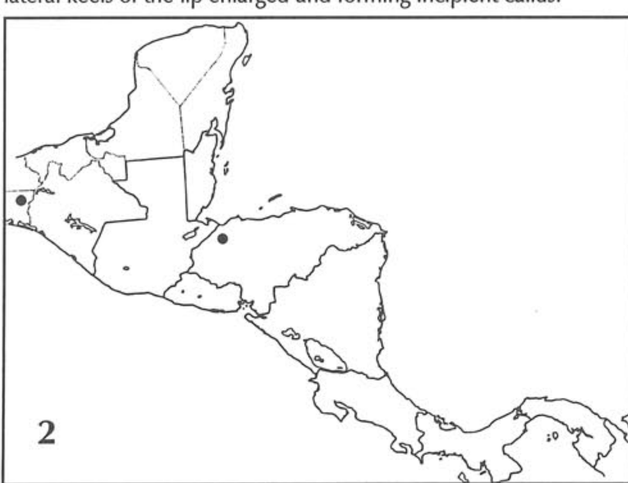
Hierba epífita, cespitosa, 45-67 cm de alto. **Raíces** basales, carnosas, 3 mm de grosor. **Tallos** sencillos, tipo caña, teretes, erectos, 21-44 x 0.1-0.2 cm; cubiertos por vainas, las de la mitad inferior sin lámina, evanescentes, las de la mitad superior portando lámina y persistentes, 20-36 mm de largo. **Hojas** generalmente 9, distribuidas en la mitad apical del tallo; vaina blanco-grisácea (las inferiores) o verde-amarillenta (las superiores), ligeramente estriada, 15-35 mm de largo; lámina articulada, linear-lanceolada, acuminada, graminoide, diminutamente aristada en el ápice, 7-16.5 cm x 0.2-0.6 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, florece una sola vez, racemosa, ascendente a arqueada, 5-8 cm de largo; pedúnculo ca. 2 cm de largo, con 1-2 brácteas cortas a largas; raquis sinuoso, filiforme. **Brácteas florales** acuminadas, filiformes, casi tan largas como el ovario, 5-13 x 2 mm. **Flores** 7-15, resupinadas, simultáneas, de color verde pálido a crema-anaranjado. **Ovario** delgado, ligeramente dilatado hacia la mitad apical, 11-17 x 0.8-1.2 mm. **Sépalos** extendidos, libres, membranáceos, angostamente elípticos, acuminados, margen extendido, 5-nervados, 13-23 x 3-4 mm. **Pétalos** extendidos, angostamente elípticos, agudos, membranáceos, margen extendido, 3-nervados, 13-21x 1.5-3 mm. **Labelo** unido a la columna, entero, ovado-triangular, base truncada, agudo a obtuso, recurvado cerca de la base en posición natural, 8-11 x 4-9 mm; ecalloso; disco tricarinado. **Columna** recta, delgada, dilatada hacia el ápice, 7 mm de largo. **Clinandrio** entero, corto, en forma de embudo. **Antera** ovoidea, aguda, papilosa en la punta. **Polinios** 4, obovoides, lateralmente comprimidos, subiguales. **Rostelo** subapical, hendido. **Lóbulos laterales de estigma** prominentes, casi tan largos como la cavidad estigmática. **Nectario** penetrando un tercio del ovario, no ornamentado. **Cápsula** no vista.

Epiphytic, caespitose **herb. Roots** basal, thick. **Stems** thin, terete. **Leaves** distributed throughout the apical half of the stem, linear-lanceolate, acuminate, minutely aristate. **Inflorescence** apical, racemose, erect to arching, rachis filiform. **Floral bracts** nearly as long as the ovary, acuminate. **Flowers** 7-15, resupinate, simultaneous, light green to creamy orange. **Sepals** narrowly elliptic, acuminate, 5-veined. **Petals** narrowly elliptic, acute, 3-veined. **Lip** entire, ovate-triangular, acute to obtuse, recurved near the base; ecallose; disc 3-ribbed. **Column** straight, dilated towards the apex. **Clinandrium** short, funnel-shaped, entire. **Anther** ovoid, acute, the apex papillose. **Nectary** penetrating 1/3 of the ovary, narrow, unornamented.

OTHER SPECIMENS: HONDURAS: CORTÉS: Cerro Cantiles, Cusuco National Park, *Thomas 635* EAP, HEH, MO! TEFH. **MEXICO: OAXACA:** Municipio San Miguel Chimalapa: Cerro Salomón, *Wendt 5166 et al.* AMO! CHAPA! Cerro Sabinal (pico occidental del Cerro Guayabitos), *Maya 1082* AMO! (illustration voucher) CHAPA!

DISTRIBUTION AND ECOLOGY: Known presently from the Chimalapas region, in the Oaxacan portion of the Sierra de Tres Picos, which represents a branch to the west of the Sierra Madre de Chiapas (Wendt 1989), and Honduras. Epiphyte, in upper mountain rain forest of *Liquidambar*, *Podocarpus* and *Quercus*, at 1700-1850 m altitude. Flowering in December-March.

RECOGNITION: At fist sight *Epidendrum wendtii* looks like an over-grown plant of *Epidendrum chloe*. Both have slender, delicate plants with long, tapering, grass-like leaves and an apical raceme of yellowish-green flowers, sometimes with the sepals and petals flushed bronze, and the simple lip. However, the flowers of the former are nearly twice as large as the latter, and the lip is strongly recurved from the base and proportionately longer and more pointed. We interpret *E. wendtii* as representing as a sister species of *E. chloe*, which is widespread and more common in Mesoamerica, from Chiapas to Nicaragua; and has the basal portion of the lateral keels of the lip enlarged and forming incipient callus.

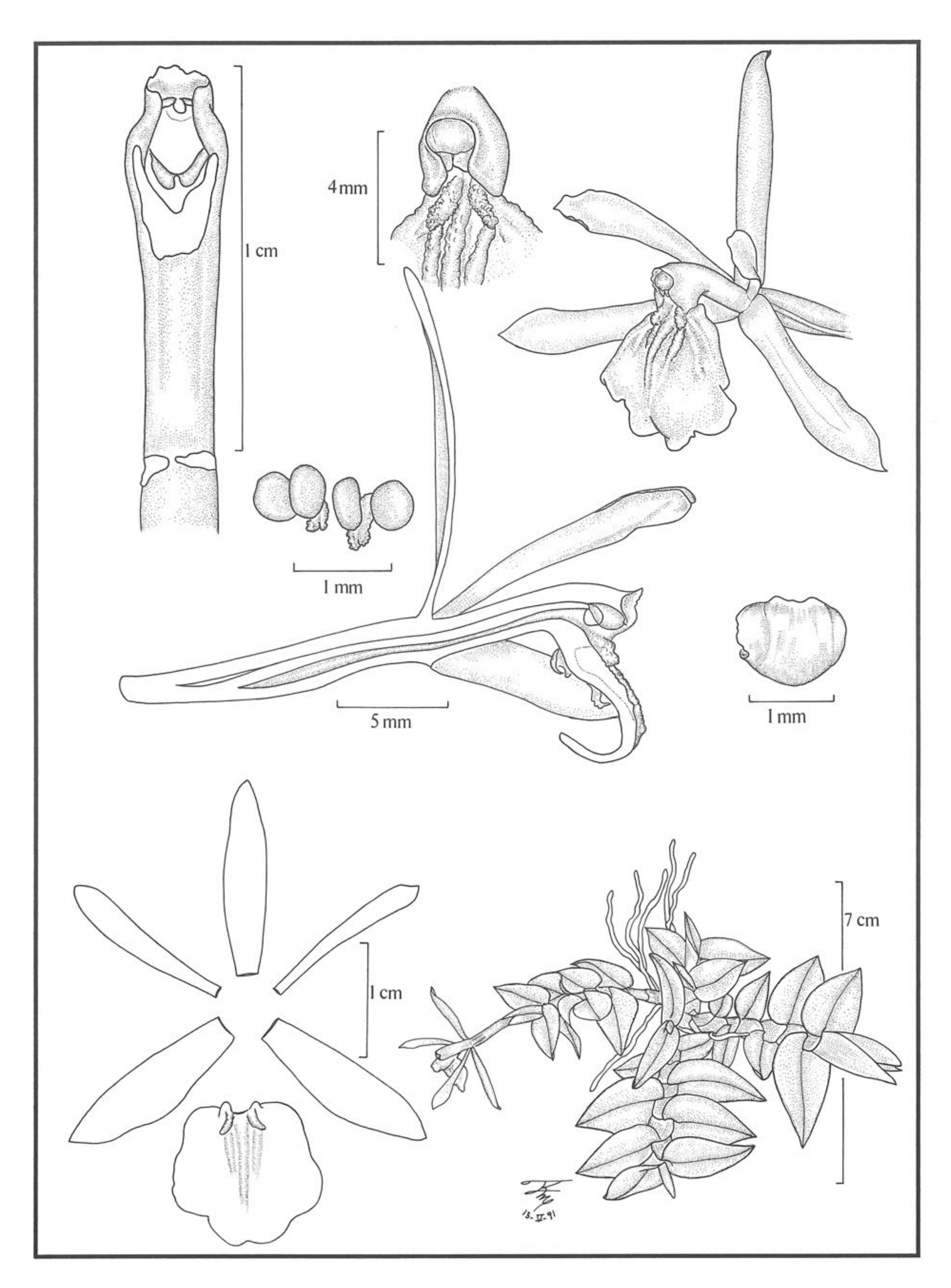


CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: Named in honor of Dr. Thomas Wendt, American botanist who made fundamental contributions to the botanical exploration of the Uxpanapa and Chimalapas regions in southern Mexico, one of the less-known but biologically more diverse areas of the whole country.

REFERENCES: Wendt, T. 1989. Las selvas de Uxpanapa, Veracruz-Oaxaca, México: evidencia de refugios florísticos cenozoicos. **Ann. Inst. Biol. UNAM** 58: 29-54.

Authors: E. Hágsater & G. A. Salazar **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
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EPIDENDRUM WHITTENII Hágsater & Dodson

Plate 400

EPIDENDRUM WHITTENII Hágsater et Dodson, *sp. nov.*

Holotype: ECUADOR: Morona-Santiago; Camino Patuca-Santiago-Morona a lo largo del Río Santiago, km 62, cerca de la cima en copa de árbol alto, selva húmeda alta, 800 m, col. 22 Nov. 1988, pressed 10 July 1992, ***E. Hágsater 9664 et al.*** QCNE! Clonotypes: 29 July 1993 AMO! 10 June 1997 AMES! USM! (illustration prepared from this plant without specific voucher).

Herba caespitosa prostrata, caulibus compressis, inflorescentia subsessili, 3-bracteata, floribus successivis, albidis, labello cordato, suborbiculato sublobato.

Hierba epífita, cespitosa, 7-18 cm de alto. **Raíces** filiformes, basales, ca. 0.5 mm grosor. **Tallos** tipo caña, horizontales y extendidos en posición natural, lateralmente comprimidos, 4-14 cm de largo. **Hojas** numerosas, distribuidas a todo lo largo del tallo y en el mismo plano del tallo; vaina tubular lateralmente comprimida, hasta de 1 cm de largo; lámina ovado-lanceolada, aguda, suculenta, de color verde glauco 14-50 x 0.7-1.2 cm. **Espata** ausente. **Inflorescencia** apical, del tallo maduro, sésil, hasta de 4 cm de largo incluyendo la flor; bracteas del pedúnculo 3, imbricadas, ovadas, agudas, conduplicadas, hasta 21 mm de largo. **Flores** hasta 4, sucesivas, una a la vez, blancas, la columna verdosa hacia la base, fragancia nocturna, dulce. **Ovario** pedicelado, ligeramente dilatado en la mitad apical, 18-23 mm de largo. **Sépalos** extendidos elípticos, obtusos, margen revoluto, los laterales algo arqueados, 5-nervados, 13-16 x 5 mm; los **laterales** menores. **Pétalos** entreabiertos, oblanceolados, obtusos, margen revoluto, 3-nervados en la base, arriba los laterales muy ramificados, 12-15 x 3-5 mm. **Labelo** unido a la columna, entero, cordado, suborbicular, obscuramente lobado, 10 x 12-15 mm; bicalloso; disco con 3-5 quillas engrosadas, irregulares. **Columna** arqueada, 8-11 mm de largo. **Clinandrio** eroso, sin sobrepasar el cuerpo de la columna, oculta la antera parcialmente. **Antera** reniforme, el frente rugoso, 4-locular. **Polinios** 4, subiguales, obovoides, lateralmente comprimidos; caudículas algo más largas que los polinios, granulosas, en dos pares; viscidio semilíquido. **Rostelo** apical, hendido. **Lóbulos laterales del estigma** de más de la mitad de la cavidad estigmática. **Nectario** penetrando más de la mitad del ovario, no ornamentado. **Cápsula** no vista.

Caespitose epiphyte. **Roots** filiform. **Stems** cane-like, horizontal, prostrate, laterally compressed. **Leaves** numerous, distributed throughout the stem and in the same plane; blade ovate-lanceolate, succulent, green-glaucous to green. **Inflorescence** apical, from the mature stem, sessile, with 3 imbricating ovate, acute, conduplicate bracts. **Ovary** slightly dilated at the apical half. **Flowers** up to 4, successive, one at a time, white, column greenish at the base, sweetly fragrant at night. **Sepals** elliptic, obtuse, margin revolute; **laterals** somewhat arched. **Petals** oblanceolate, obtuse, margin revolute, 3-veined, the laterals much branched above. **Lip** united to the column, entire, cordate, suborbicular, vaguely lobate; bicallose; 3-5 thickened, irregular keels on the disc. **Column** arched. **Clinandrium** short, erose. **Nectary** very deep, penetrating more than half of the ovary.

OTHER SPECIMENS: ECUADOR: Napo: *Hirtz 3933* RPSC! *Thurston 4131 & Dodson 14274* AMO! **Morona-Santiago:** *Dodson 17773 et al.* RPSC! *Hirtz sub Dodson 18156* RPSC! *Hirtz 4051 et al.* RPSC! **PERU: Huánuco**: *Asplund 12553* S! *Kuhn sub SEL 81-654* AMO (xerox)! SEL! *Kuhn sub Hágsater 7686* AMO! (illustration voucher, unpublished). **San Martin**: *Halton 122 & Besse* SEL! *Melin 234* S! **Puno:** *León & Collantes 677 sub Bennett 7353* AMO (xerox of illustration)! USM.

OTHER RECORDS: PERU: *Bennett 4599* AMO (Pastorelli illustration #596 xerox)! *Bennett 5093* AMO (illustration xerox)!

RECOGNITION: *Epidendrum whittenii* is recognized by the small, caespitose, recumbent plants, the leaves fleshy, in one plane, with 3 apical, conduplicate, imbricating, prominent bracts, the flowers appear singly in succession and are rather large for the plant, white, with an orbicular lip, base cordate, with prominent, irregular keels. We have not recorded any other species which looks quite like it. *Epidendrum lueri* Hágsater & Dodson and *Epidendrum madsenii* Hágsater & Dodson have similar-looking leaves, but those plants are pendent and have a completely different habit, the stems branching, inflorescence and simultaneous flowers. *Epidendrum cuchibambae* Lehm. & Kraenzl. also has large imbricating bracts at the base of the inflorescence, but the plant habit is different, with erect stems and leaves grass-like.

DISTRIBUTION AND ECOLOGY: Known from Ecuador and Peru, from the eastern foothills of the Andes at 700-1400 m altitude, in tall forest-trees, in tree-tops with high, year around humidity. Flowers slightly sweetly fragrant at night, of the fruit of *Syzgium jambos* (L.) Alston. Flowering January to July.

CONSERVATION STATUS: DD (data deficient).

ETYMOLOGY: In honor of Dr. Mark Whitten of the University of Florida at Gainsville, who specializes in orchid fragrances and pollinator systems of the Gongoriinae. He has collected extensively in Tropical America.

NOTE: Plants from Peru are somewhat different, with deep green leaves, longer stems, shorter clinandrium and wider petals, but otherwise indistinguishable. This species was collected in Peru near Tingo María and later propagated and cultivated at J. & L. Orchids and distributed as siblings. Specimens and illustrations have also been prepared by Bennett and his coworkers. We wish to thank both J. & L. Orchids and Eric A. Christenson and David Bennett for sharing their plant material.

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Authors: E. Hágsater & C. H. Dodson **Illustrator: R. Jiménez M.** **Editors: E. Hágsater, L. Sánchez S. & J. García-Cruz**
Herbario AMO Apartado Postal 53-123, 11320 México, D.F., MÉXICO